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SPECIAL ARTICLE

The Fourth Census of Social Science Research in Tamil Nadu .... S. 1—22

EDITORIAL—SOME HIGHLIGHTS

I. General Economic Scene

State :

Perspective Plan, the Fifth Plan and the annual budget : The Perspective Plan for Tamil Nadu 1974-1984, (See Vol. IV pages 105-111) was presented by the Chief Minister to the legislature on April 22. The State Planning Commission's document was a roneoed document running into four valumes. It is being processed in the Government Press and will be available in May/June. At the request of its Chairman, the Chief Minister, the Commission also prepared in April an 80 page summary of the Plan document in English, which was available in April. The legislature approved the budget presented by the government for 1974-75 as summarised in Vol. IV pages 253-256. The Ftfth Plan and the first year Plan of the Fifth Plan were also noted by the legislature as presented by the Government and summarised in the following table :

(Rupees Lakhs)

Head of Development	*Fifth Plan Provision (Tentative) 1974-75 to 1972-79*	*Plan for 1974-75*
I. AGRICULTURAL AND ALLIED PROGRESS—		
(1)	(2)	(3)
1. Agricultural Education and Research	5,66	62
2. Crop Husbandry	25,30	4,07
3. Minor Irrigation	58,56	7,26
4. Soil Conservation	9,12	1,46
5. Command Area Development	85	18
6. Animal Husbandry	14,74	90
7. Dairying and Milk supply	3,85	34
8. Fisheries	18,80	1,74
9. Forest	8,00	1,63
10. Cinchona	1,01	14
11. Agricultural Credit	15,00	1,70
12. Agricultural Marketing	2,45	10
13. Science and Warehousing	50	30
Total—1	1,63,84	20,44

Head of Development		Fifth Plan Provision (Tentative) 1974-75 to 1978-79	Plan for 1974-75
II. CO-OPERATION AND COMMUNITY—			
1. Co-operation		23,59	4,43
2. Community Development and Panchayats		17,77	1,80
	Total—II	41,36	6,23
III. PROJECTS/PROGRAMMES OF RURAL DEVELOPMENT AND EMPLOYMENT		1,00	50
IV. IRRIGATION AND POWER—			
1. Irrigation and Flood Control		68,09	8,32
2. Power		3,26,59	44,77
	Total—IV	3,94,68	53,09
V. INDUSTRY AND MINING—			
1. Large and Medium Industries		46,65	3,84
2. Mineral Development		1,50	13
3. Village and small Industries		40,43	3,63
	Total—V	88,58	7,60
VI. TRANSPORT AND COMMUNICATIONS—			
1. Roads		63,02	9,99
2. Road Transport		21,00	1,56
3. Inland Waterways		1,50	31
4. Shipping, Ports and Harbours		2,61	1,77
5. Tourism		2,05	25
	Total—VI	90,18	13,88

Head of Development		Fifth Plan Provision (Tentative) 1974-75 to 1978-79	Plan for 1974-75
VII. SOCIAL SERVICES—			
1. General Education		89,11	10,11
2. Technical Education		10,75	1,21
3. Cultural Programmes		2,30	33
4. Health and Family Planning		55,06	4,86
5. Nutrition		57,14	15
6. Water-supply and Sanitation		93,00	15,04
7. Housing		58,35	8,60
8. Town-planning and Urban Development		20,09	1,33
9. Welfare of Backward Classes		23,99	3,95
10. Social welfare		10,02	76
11. Craftsmen Training and Labour Welfare		3,70	50
	Total—VII	4,23,51	46,84
VIII. MISCELLANEOUS—			
1. Statistics		1,90	6
2. Hill areas Development Programme		3,50	32
3. Information and Publicity		40	12
4. Evaluation		40	6
5. Administrative Buildings		25,00	2,00
	Total—VIII	31,20	2,56
	Grand Total	12,34,35	1,51,14

As noted in Vol. IV page 175, both the Fifth Plan and the 1974-75 Plan are tentative and considerably above the estimates indicated by the Union Planning Commission. Their finalisation awaits a meeting of the National Development Council which will decide the principles and qnantum of Central assistance to the State Plans, in light of which the State Plans—both the Fifth Plan and the annual Plan—will be finally established.

Reorganisation of the State Planning Commission: With the submission of the Perspective Plan for Tamil Nadu 1974-1984, the Planning Commission completed

its mandate. On April 23, the government reorganised the Commission and gave it the following functions :

- to watch the implementation of the Plan,
- to make periodical assessments and take necesary measures for proper co-ordination,
- to advise the government on the action to be taken on current economic problems like oil crisis, transportation of coal, etc,
- to study the latest practices and technological developments and suggest suitable changes in the implementation of plan schemes, and
- to recommend to the government the setting up of study groups to go into any specific questions relating to the plan schemes.

The membership of the Commission has also been reconstituted :

The Chief Minister as Chairman,

Mr. K.A. Mathialagan as Vice-Chairman,

Dr. Bright Singh,

Dr. V. Shanmugasundaram,

Secretary to Government in Finance,

Secretary to Government in Agriculture,

and Secretary to Government in Rural Development and Local Administration.

Power: The power situation as forecast in the last issue (Vol. IV page 256) worsened in March and April to the point where as from April 1, (a) the 15 per cent cut on HT and LT services (See Vol. III page 693) was increased to 30 per cent, (b) the 10 per cent cut on essential services was increased to 15 per cent, (c) for new HT industries and additional loads to existing HT services the quota was reduced from 100 units to 90 units per month per KW, and (d) for continuous process industries who have been permitted additional demand, the quota was reduced from 200 units to 180 units per month per KW. The 150 units of exemption limit for domestic consumption and the peak load restrictions were continued unchanged. The causes which led to this additional power cut were: (a) in March, Ennore which has a generating capacity of 340 MW was down to generating just 60 MW because one 110 MW transformer which was damaged by fire was being repaired (See Vol.III page 773), one 60 MW set which was being overhauled and the other 110 MW closed down because of a boiler leak: (b) Neyveli's contribution was down by 50 MW for similar reasons. The result was widespread disruption in production and services in March and April. Telephone connections in Chidambaram and Panruti, telegraph services in Erode, electrified train services on the Arkonam – Chingleput line were interrupted, load shedding and power failures in Thanjavur and North Arcot districts affected farm operations, Navarai paddy, chillies, ragi, groundnut and sugar cane crops. The chemicals, textile and engineering units at Sahupuram, Madurai, Coimbatore, and Tirunelveli, the rice and flour mills, coffee grinding establishments and small industries were all forced to reduce their activities. Towards the end of April, there were further uncertainties introduced as a result of the threatened railway strike and Neyveli's labour troubles. As noted in Vol. IV page 112, the daily coal requirement of Ennore is 3,500 tonnes and Basin Bridge 1,000 tonnes, amounting to 1.35 lakh tonnes per month. To meet this need, 70,000 tonnes are to be moved from Singareni, 20,000 tonnes from Talcher, 13,000 tonnes from

Madhya Pradesh and 30,000 tonnes from the Bengal-Bihar mines which are to be moved by sea. In actual fact, the total supply in January was 26,330 tonnes (against an allocation of 1.3 lakh tonnes). The State authorities personally negotiated in Delhi with the 3 ministries—Steel and Mines, Railways, and Shipping and transport to meet this rather desperate situation. All they obtained were promises which are yet to be fulfilled and witnessed the usual unseemly fight, with each ministry blaming the other. The Railway Board gave the State authorities written assurances that the railways will provide the wagons and the route to move coal from the collieries in Bengal and Bihar to the Kidderpore docks. The Shipping ministry in its turn has promised to provide the ships to transport the coal. The ministry of Steel and Mines has reconfirmed the 1.3 lakh tonnes monthly allocation to the State. But then the Shipping Ministry pointed to the railways not being able to meet its own coal needs and cast doubts on that ministry's ability to meet its promise to transport coal to Kidderpore. The Railway Board in its turn accused the ministry of mines for overbooking coal orders—some 30-35 per cent above its capacity. This scandalous inter-ministerial infighting must stop if the power crisis in the State and Country is to be met. On top of all this the threatened railway strike would paralyse this State. The power needs of the State as computed in Vol. III page 2 are 25 million units including line losses of 2.4 million units, agriculture 5 million units, essential and domestic services 2.14 million units and the rest for industrial consumption. To meet this demand of 25 million units, the hydel generation is 9.8 million units and if coal is assured and available and Neyveli has a minimum of industrial peace, Ennore and Basin Bridge generate 3.35 million units, Neyveli 5.6 million units and the Kerala supply 1.7 million units, making a total of 20.5 million units. Faced with the new uncertainties at the end of April, (On April 24, the coal stocks for Ennore and Basin Bridge were 2.5 days worth only), the government took action to obtain from the Union government on a priority basis an allocation of furnace oil so that one boiler in Basin Bridge and one at Ennore can be switched over to oil. In Ennore by April 27 one 110 MW and two 60 MW sets were functioning, the second 110 MW set was to be commissioned in early May. In any case given the 2 day supply of coal on which Ennore and Basin Bridge are subsisting, such a switchover on a long term basis, despite the pressures of the oil crisis seems a desperate but needed act. The power situation calls for short term and long term measures. There is also the emergency plant to impose a 100 per cent cut in the event of a railway strike. For now the switchover of 2 boilers in the 2 thermal stations to oil, the building of coal dumps at Kidderpore dock and Haldia port, the quick turn around of the 2 ships that have been acquired for moving the coal from these dumps, an immediate increase in the delivery from Singareni which against a monthly allotment of 70,000 tonnes has recently averaged around 17,000-20,000 a month, adequate maintenance of the thermal station equipment to prevent damage to transformers and leaks to boilers, and a sensible reduction in line losses—a full fledged fire fighting squad and an automatic fire quenching system at each generating station as recommended by the Mahalingam Committee,—these are the actions that should be taken now. The long range programme includes speedy construction of the Tuticorin thermal station and all the other 12 schemes referred to in Vol. IV page 4, improvement in the efficiency of Neyveli mining and the second mine cut with the proposed 1,000 MW plant and joint planning with neighbouring States, Karnataka

in the Hoganekkal scheme and Kerala in the second stage of Iddiki.

March and April saw the spread of the power crisis all over the Country. Only three States are in a surplus position—Kerala, Himachal Pradesh and Orissa. All the other States are in a position similar to that of this State—some even worse. In early April, the Trombay thermal unit ran out of coal, Tarapur cut back its production by 150 MW and Nasik by 140 MW. Power cuts ranging from 25-30 per cent and load shedding are seriously affecting the Maharashtra industry. U P. has been hit very hard. Its Hardiaganj thermal station ran out of coal in mid March and industries in Kanpur, Allahabad, Lucknow had to slow down and all its food processing units have put up their prices. In West Bengal the engineers' strike gnd the close down of the Sanhalditi thermal plant has hit both engineering units and the jute mills in the State. In Gujarat from mid March a 25 per cent power cut in the industrial sector and a six hour load shedding in the farm sector has been operating. From early March, due to the breakdown in the Chandrapura thermal project and the drying up of the Umam lake, a cut of 10 MW in power consumption, a one shift per day week for all industries have been in operation. Punjab increased its power cut from 40 to 60 per cent in early March due to reduced power from the Bhakra generator complex. Erratic power shedding and cuts over and above the 60 per cent cut led to a loss of Rs. 3 crores per day in production. Simliar experiences are recorded in Madhya Pradesh, Rajasthan, Andhra Pradesh and Karnataka. The power situation in the Country is going to be difficult till June/July and it is likely this deficit power situation will continue through the Fifth Plan. Here again short term and long term measures should be undertaken to ameliorate the situation. This State government has under consideration a proposal to allow private industrialists to establish units for power generation to meet their needs and feed any surplus into the State grid. In fact for the Fifth Plan, industrial units should be encouraged and permitted to have their own captive generators. This State government has also decided to instal diesel power generating sets in all the industrial estates to cushion the effect of power cuts on small scale industries. The problem here is that the demand for such generators is far outrunning the supply. BHEL's capacity is being used to the full so that further orders will increase delivery delays. The import of generators from the Rupee trade area involves a time delay ranging from 6 months in the case of the Soviet Union to 2 years in the case of Czechoslovakia. Another short term measure that should be taken is the early exploitation of cane sugar factories in the Country which can supply 1,600 million KWH of electricity. Sugar factories use bagasse for their electric energy at the rate of 40 units of electricity for every ton of crushed cane. The bagasse surplus left with them if burnt can provide outside electricity of the order of 1,600 million units and this source should be used. The long run measures should include execution of the schemes now underway that can add 2.35 millon KW during the year and the functioning of a sound monitoring system to ensure that this target is achieved this year. The speedy installation of equipment to the Electricity Board, proper maintenance procedures, priority in the matter of supply of their needed materials like cement call for structural changes in the State Electricity Boards in order to avoid the Fourth Plan slippages. Finally nuclear energy plans need to be speeded, particularly reactor technology which will exploit fully our limited thorium reserves and the more hopeful plutonium technology. By next year electricity consump-

tion will increase to 180 KW per capita and Tarapur followed by Kalpakkam and Ranapratapsagar must use the nuclear fuel being produced by the Hyderabad nuclear fuel complex to make their contribution to the mounting demand for electric power.

Distribution network: The State government has developed a procurement and distribution system under which the State Civil Supplies Corporation is entrusted with the wholesale trading in food-grains and the co-operatives are being made increasingly responsible for retail trading, gradually replacing private retailers particularly in the distribution of the controlled articles of rice, sugar, wheat, rava, maida etc. As at the end of March out of 9,842 retailers, the 102 run by the State Civil Supplies Corporation were gradually being transferred to co-operatives who were running 4,753 units and the private retailers 4,987 units. For this transformation, it is essential that co-operatives elect as their Chairmen persons of integrity and honesty, and the system of nominated chairmen which carries with it political influence and nepotism be avoided. The problem of rising prices is faced by this State as by the rest of the Country as part of the general malaise of inflation which is analysed under the "National" section. The price of pulses has continued to rise despite the sales tax remission referred to in Vol. IV page 176. The government instituted at the end of March a system of rewards for the detection of smuggling and hoarding of essential commodities. 10 per cent of goods so seized are awarded as the reward. The Consumers' Association and a traders' Conference are also active in helping to keep prices down and institute a self policing system against adulteration. Following their recommendation, a Rs. 2.5 lakh food analysis laboratory has been set up in Madurai to check the quality of food articles sold in the four districts of Madurai, Ramanathapuram, Tirunelveli and Kanyakumari. In addition to the regional laboratory in Coimbatore, the laboratory in Thanjavur serves the needs of the Thanjavur, Tiruchi and Pudukottai districts. The government has also drawn up a Rs. 22.50 crores project for the development of regulated markets for fruits and vegetables in the State. The network will function in 17 urban areas and will be responsible for marketing fruits and vegetables along with the necessary cold storage facilities at each centre. This project now awaits Union Government clearance and is addressed to the World Bank as part of its aid package. These multi-pronged measures are aimed at smoothening the distribution network in the State and indirectly at dampening the price rise of essential goods that the Country faces.

Agrarian Legislation: Further to the land reform measures reported in Vol. IV page 178, the April session of the legislature adopted the Land Reforms (Fixation of Ceiling on Land) second and third Amendment Bills. Under the Second Amendment Bill, some types of transfers and sub-divisions of land (which are in effect benami transactions) are declared void. In this Institute's publication, 'Land Reform In Tamil Nadu', the extent of these benami transactions is quantitatively assessed and proposals made for combatting them. The Bill acts on two of the recommendations First any transfer, sale or sub-division of land on or after the notified date and before the publication of the government's notification that the surplus land is needed for public use is cancelled and made void. Second the officer in charge is empowered to calculate the ceiling entitlement of the person concerned as if no sale, transfer or sub-

division has taken place. This bill will plug one loophole in the ceiling legislation. What is next needed is to bring together all the various pieces of agrarian legislation into a single comprehensive bill to enable its understanding by all concerned as well as its effective implementation. The Third Amendment Bill (a) brings forward the date of exemption to 15 February 1970 of plantations from the ceiling law which reduced the ceiling from 30 to 15 standard acres instead of April 6, 1960 which was the date for the commencement of the original act and (b) authorises planters to hold 20 per cent additional land which is interspersed or contiguous to their holdings as at February 15, 1970. This liberality towards the plantation industry is based on the assumption that plantations both because of their economies of scale and as major foreign exchange earners should be exempted from the ceiling structure. The legislature also set up a joint select committee to examine the Tamil Nadu Occupants of Kudiyiruppu Special Amendment Bill which proposes the setting up of machinery to decide whether (a) a person is an agriculturist or agricultural labourer and (b) any site is Kudiyiruppu. Further to the amendment passed in January (See Vol. IV page 178), the present bill provides that no agriculturist or agricultural labourer should have more than one Kudiyiruppu. This legislation will ensure that the Act is not used for acquiring and leasing land over and above the 3 cents to which each such person is entitled.

Inter-State Waters: Further to the recommendation in Vol. III page 459 of the Bulletin, Tamil Nadu and Kerala concluded an agreement in March to implement the Parambikulam-Aliyar project (See Vol. III pages 232-233). Under the former project, the two States will generate 442 million units of power by utilising 14 tmc feet of water in the Pandiyar-Punnapuzha system, with the water flowing to Kerala, using the water again for power generation in the Cholathipuzha sub-basin and sharing the electricity thus produced equally between the two States. Under the Parambikulam-Aliyar project, Kerala has agreed to the construction of the dam in the catchment of lower Neerar, so that Tamil Nadu will get an extra 2.5 tmc feet of water and increase its power generation and irrigation facilities. The three mile long tunnel in the upper Neerar scheme will be completed in June and work has begun on the 5 mile tunnel in the lower Neerar. These two projects will help the two States increase their power generation and irrigation resources. On the Cauvery waters, the Committee which is studying measures for its sharing (See Vol. IV pages 178-179) is nearing completion of its work. Its report will be the basis for a meeting of the Chief Ministers of Kerala, Karnataka and Tamil Nadu to arrive at a decision in the sharing of the waters.

Transport and Telecommunications: The electric traction on the Gudur-Madras-Tiruvellore section was inaugurated in early April. The present scheme provides 184 kilometres of double track with a short stretch of quadruple track for 50 kilometres. This Rs. 11.6 crore project will enable a four fold increase in passenger and goods traffic movement on this heavily travelled track. Also 3 more metre gauge trains – Madras–Rameswaram, Madras-Trivandrum and Karnataka express are being dieselised. The new railway line, Kanyakumari from Tirunelveli via Nagercoil is being laid. The Transport sector in the State closed 1973-74 with a net profit of Rs. 91 lakhs. While the Metropolitan Transport system, Madras made a loss of Rs. 84 lakhs, the State Transport Department registered a

profit of Rs. 1 crore, Cheran Rs. 45 lakhs and the other corporations Rs. 30 lakhs. The Pallavan Transport Corporation plans to increase its buses from 1,282 to 1,430 by the end of the year. The State government has urged the Union government to undertake a census of the Vehicles off the road for want of spare parts and to ration the existing production capacity between the production of vehicles and the production of spares. It has also announced a special incentive bonus scheme to employees of the transport corporation who effect economy in the consumption of fuel and lubricants. The value of the bonus is to be 1/3 of the cost of the fuel and lubricants saved. Also the government announced a Rs. 1 lakh National prize for the most significant contribution to reduce fuel consumption in buses and a prize of Rs. 50,000 for the design of a new bus body which reduces fuel consumption. Again for the second time in four months the government as of May 7 revised taxi and auto-rickshaw fares as a consequence of the further increase in petrol and crude product prices (See Vol. IV pages 3 and 187). There is agitation, however, on the part of the taxi and the auto-rickshaw owners about the inadequacy of the increases granted. The Madras port is now equipped to handle maritime cargo by lash barges which will reduce the ships' detention time as the loaded barges will be responsible for loading and unloading. In 1973-74 the port handled 7.76 million tonnes compared to 6.8 million tonnes in the previous year. Of this record amount, 2.3 million tonnes was iron ore and 3.1 million tonnes export cargo. Also its deep harbour was used to provide berthing facilities to 2 giant tankers of the SCI — tankers which had been turned away from the Bombay Port. Further FCI, faced with heavy problem of unloading, clearing, storing, and distributing foodgrains and fertilisers in the Country, has begun using and developing the minor ports of the State. In 1973–74, 70 vessels used the Nagapattinam, Cuddalore, Pondicherry and Tuticorin port facilities involving a lakh tonnes wheat, 2 5 lakh tonnes fetilisers and 75,000 tonnes of milo. Nagapattinam was able to handle 15,000 tonnes of bulk urea and for the first time Cuddalore handled 3 fertiliser vessels. The minor ports in the State are thus developing as important transport arteries for the Country including conveying in coastal vessels milo and wheat from Nagapattinam and Tuticorin to Calcutta. On the other hand the air cargo facilities at the Meenambakkam airport are inadequate to handle the export consignments of finished leather goods, silks and ready made garments destined for Europe. As pointed out in the last issue, Vol. IV page 295, the power cut has resulted in some bunching of these exports and at one point in mid March a backlog of over 40 tonnes of export goods were awaiting clearance. As most international airlines use the Bombay airport, the cargo traffic from Madras to Bombay has become particularly heavy and I.A C. and A.I. have to make special arrangements to clear this traffic. The Rs. 2 lakh new cargo warehouse being erected in Meenambakkam will soon provide more cargo storage space at this outlet. At a Commonwealth meeting in May, a plan is to be discussed to link Madras by cable with Colombo, Singapore, Jakarta and Hongkong. The Overseas Communications centre opened in Madras in 1856 connects Madras by wireless with UK, Singapore, Indonesia and Nigeria. Now at a cost of Rs. 16 crores, Madras will be a terminal station for the Sea Com Repeated co-Axial cable Project which originates in London and after crossing the Atlantic and Pacific to Sydney links Hongkong and Singapore and now will link Jakarta and Colombo with Hongkong.

Housing: For low cost housing, the State government included Rs. 21.63 lakhs in the final supplementary estimates of Rs. 53.91 crores for 1973-74 approved by the April session of the Legislative Assembly. Originally in the 1972-73 budget this sum of Rs. 21.63 lakhs was to be made available as commercial bank loans to the Housing Board. As the credit was not available, the government has advanced the amount from its own resources so that the Housing Board might execute its programme of low cost housing. Under the Jayanthi village scheme, the Housing Board is building 135 low cost rural houses in 6 villages in Chingleput at a cost 30 per cent lower than conventional houses. HUDCO and SERC have examined the construction techniques, the structural stability and unit costs, and have recommended these people's houses to other Housing Boards. Similarly the supplementary estimates provided Rs. 1 crore as share capital for the Harijan Housing Corporation which is being constructed to help Harijans build their houses.

City facilities: Unlike last summer (See Vol. III page 400) and further to the problem referred to in the last issue, Vol. IV page 261 Madras city has been passing through acute water scarcity. All water for gardening purposes has been stopped since February and by March water in most areas is available only for one hour in the day. This is mainly due to the failure of the North East monsoon and the rapid drying up of the water in the few lakes surrounding city. The main sources of water supply to the city are Satyamurthy Sagar, Sholavaram, Red Hills and some tube wells. With all these sources the per capita water consumption in Madras is a poor 17 gallons against 50 gallons in Bombay, Calcutta and Delhi. By the end of the eighties the supply will have to increase from the current 50 mgd to 200 mgd to meet the domestic and industrial demand for water. The Veeranam water supply scheme started in 1969 will bring 40 mgd of Cauvery waters from the Veeranam aqueduct in Chidambaram to Madras by the end of 1975. As part of the mass contact programme (See Vol. IV page 7), the March meeting of the inhabitants of 6 settlements in Alandur, meeting with the Highway and Electricity Board engineers and the district collector reached agreement on the building of access roads, bus services and action against power flucuations and breakdowns. This gradual improvement of civic amenities is one of the results of this programme.

National ;

Fourth Plan Close: With the onset of April, the Fourth Plan ends with overall and sectoral achievements and rather serious shortfalls. Against the target growth rate of 5.7 per cent for the plan, the draft Fifth Plan refers to a 3.7 per cent base, the economic survey forecast a 3.5 per cent growth (See Vol. IV page 267) while actual five year achievement averages around 3.3 per cent. As a consequence except in the export area, all achievements are short of the targets. Against the foodgrains production target of 127 million tonnes, the draft Plan assumes an achievement of 114 million tonnes, the economic survey 110 million tonnes and the actual may be somewhat short of this, as the arrangement for wheat imports to be referred to later indicates. Cotton production target was 8 million bales and achievement 6.5 million bales, jute target and achievement 7.4 million bales and 5.6 million bales, sugarcane 15 million tonnes and 13.4 million tonnes and oilseeds 10.5 million tonnes and 9.5 million tonnes. Coal production

as noted in the last issue (Vol. IV page 273), in the last year of the Fourth Plan was 79 million tonnes, might be even less in terms of delivery (See Vol. IV page 265) against the target of 93.5 million tonnes, iron ore 35 million tonnes against the 51.4 million tonnes target and crude 7.4 million tonnes against the target of 8.5 million tonnes. The dismal power performance which was a major contributory cause to the poor record is known—instead of increasing installed capacity from 14.3 million KW to 23 million KW, the actual installation was 18.5 million KW, with only 60.65 per cent of the installed capacity in use. Industrial growth for the last year as noted in the last issue Vol. IV page 267 may be near zero bringing down the Fourth Plan industrial growth to around 5–6 per cent against the targetted 10 per cent. The food buffer targetted at 7 million tonnes has been used up and does not exist at the end of the plan and against a price rise of 3 per cent per annum, the plan ended with a 24 per cent rise in the last year. On top of all this the closing months of the Fourth Plan have been dominated by the oil crisis and the spurting prices of crude and its products. Gross aid during the Plan conformed to the target of Rs. 4,130 crores, the foreign exchange reserves at Rs. 745 crores faced pressures from unfavourable trade balance and the impact of oil imports. Deficit finance was more than treble the estimate of Rs. 850 crores, while public sector outlay exceeded its target of Rs 15,902 crores and resource mobilisation increased by Rs. 200 crores over the plan target of Rs. 2,100 crores. Exports in the last 2 years of the Plan increased by over 20 per cent per annum against the target of 7 per cent. Even allowing for the export prices rise, the Rs. 3,000 crores excess in export earnings over the estimate of Rs. 8,300 crores is a plus factor. Thus the Country is entering the Fifth Plan with a much more modest base in overall growth, food production, minerals, industrial production, the power base and a hyper inflationary economy and all these factors can and must be taken into account in finalising the Fifth Plan.

Fifth Plan: The Draft Fifth Plan (See Vol. IV pages 8-15) is under revision in light of 5 factors: (a) 1973-74 prices which are 24 per cent higher than the 1972–73 prices on which the draft Plan is based: (b) the enhanced price of crude which is $11.65 per barrel instead of the less than $3 on which the Draft Plan is based: (c) the sharp rise in the price of fertilisers and non-ferrous metals which is around 200 per cent higher than the Draft Plan estimate (d) the effect of the above two factors (b) and (c) on balance of payments gap computed at Rs. 4,008 crores gross calling for a net aid of Rs. 2,557 crores (See Vol. IV page 10) in the draft Plan, while the World Bank estimates that the balance of payments pressure will call for a net foreign aid of at least double of what has been estimated at $5 billion; and (e) the resources prospects emerging from the 1974-75 Union and State government budgets which have just been adopted by the Lok Sabha and the State legislatures and which show in the serious Rs. 215 crores deficit States budgets which are not a very encouraging resources picture. The States' additional resource moblisation is Rs. 101 crores and only 7 States including Tamil Nadu are making an additional tax effort. The Central budget estimates Rs. 186 crores in additional taxes (See Vol. IV page 263). This task of revising the Fifth Plan is rightly being undertaken by the Union authorities—the Ministries and the Planning Commission—because all the factors referred to above except the mobilising of resources are outside the competence and control of the State governments and it is the Union authorities who both

know and can control these factors. What will emerge will be the best estimate for the next five years because there are elements which cannot be precisely forecast such as droughts, their effects on food grain production, the international trade and the future of oil prices. The Plan however is essentially on instrument for establishing the strategy and policies of the Country's development and on this there can be no major change. The details of its sectoral projections and programmes targets are a matter on which the States and the individual enterprises have the decisive say. The States and the public and private sector units should proceed with developing their plans and programmes on these policy guidelines. The other task in this revision exercise is for the Union authorities to take such fiscal, monetary, and industrial measures for the immediate present as will contain inflation and move the agricultural and manufacturing sectors forward.

Annual Plan: *1974-75*: The Union Planning Commission has analysed the Annual Plan for 1974-75 emerging from the budget (See Vol. IV pages 262-265) and published the results in April, showing the first year Plan at Rs. 4,833.68 crores and not Rs. 4,769 crores as stated in the last issue, Vol. IV page 264. The Union outlay including extra budgetary resources and union territories and States assistance is Rs. 3,540 crores and States Plan resources are Rs. 1,293 crores. In all State Plans for the year, higher priority has been given to power with Rs. 141 crores more than last year, irrigation with an additional Rs. 95 crores and Rs. 27 crores more for agriculture. The Union Plan provides for increases for mines, atomic energy, chemicals, shipping, transport, steel and science and technology. The decreases are Rs. 38 crores in social and community services and Rs. 18 crores in education. To the question posed in the last issue about the 5 lakh employment generation scheme (Vol. IV page 265), the present Union Planning Commission analysis makes clear that the scheme is dropped, and in place a global provision of Rs. 40 crores is provided for an employment promotion programme. The Central assistance to the State Plans is at the same level as that for 1973-74, pending discussion and decision at the National Development Council. Assistance to Tamil Nadu is shown at Rs. 41.15 crores. Thus the annual Plan starts on a rather low key modest basis with, in effect, the first year of the Fifth Plan being at about the same level as that of the last year of the Fourth Plan. If the price rise is not held down, the current real plan outlay may may be even lower. A further rather unnecessary note of uncertainty has been added by the decision of the Union authorities to make all plan and budget allocations on a half yearly basis. The import policy to which reference is made later has been announced for six months and foreign exchange requirements are being computed on an ad hoc, not annual, basis. The half yearly allocations are justified on the ground that within the next 3 months prices would have stabilised, the cost push factors brought under control and the trade gap more clearly identified. There is nothing sacrosanct about a 12 month period for budgetting or allotments, except that it is the period of economic accounting in the Country. The farmer has to plan for the rabi and kharif crop, the firm and factory have to estimate its inventory and workig capital needs on both a monthly and annual basis and so the planning and budget cycle must conform to the agricultural and business rhythm of the Country. The Union authorities should proceed on the annual Plan basis for approval and allotments and make necessary changes as and when they are needed and justified during the year.

Prices: The price rise in January analysed in the last issue (Vol. IV page 268) continued through February and March. For the week ending February 1, the official wholesale index rose by 0.4 per cent to 275.1 against 274.1 in the previous week, the all commodities index rising by 1.3 per cent. During the week ending February 23, food articles prices rose sharply, maize by 8 per cent, salt by 6 per cent, bajra and potatoes by 2 per cent with lower or stationary prices for fuel, power and light, groundnuts and oilseeds and machinery. The chemical group moved up by 3 per cent and manufactures group by 0.3 per cent. For the week ending March 28, wholesale prices fell by 0.2 per cent compared to the previous week but rose by 2.1 per cent compared to one month ago. The index for food articles stood at 321.7 as against 321.6 in the earlier week, liquor and tobacco went up by 0.8 per cent, edible oil, oilseeds and industrial materials declined by 1.4 per cent, with fuel, power and light, remaining unchanged. The government stated in early March in the Lok Sabha that the value of the rupee had declined by 19 per cent during the 12 months ending December 1973. The value of the Rupee measured by the All India industrial workers consumer price index with the base 1960 = 100 stood at 38.5 paise in 1973 against 47.6 paise in December 1972. In its April 28 Statement to the Lok Sabha the government announced that it declined still further to 37.5 paise in February 1974. As at the end of February, (February 23), the 12 month price was 25.5 per cent higher and the index results just analysed show that this rate of inflation was continuing through March at a somewhat lower level. The official wholesale price index increased by 0.9 per cent to 284.0 during the week ended April 6, as against 282.9 for the previous week. This means that as compared to April 6, 1973, in one year the price rise was 29.4 per cent. During the 12 month period, food articles prices rose by 30 per cent, prices of fish, meat and eggs by 100 per cent, vegetables by 40 per cent, milk by 30 per cent, cereals by 31 per cent, pulses by 25 per cent, mineral oils by 100 per cent and oilseeds by 40 per cent. The reasons for this continued inflation as analysed in earlier issues relate to stagnant production, low investment and savings and monetary expansion. The constant D.A. grants are a consequence and a cause vis a vis the inflationary situation. Five revisions of D A. to Union government employees in 1973-74 reflect the continuing inflation, the last two coming quickly in January and February. The next one was due in April. Each revision costs the Union budget Rs. 50 crores, so that the Rs. 120 crores in the budget for D.A. will cover only 2 rounds.

Credit and Money supply: According to RBI weekly statistical supplements as at March 8, notes in circulation increased by Rs. 1,000 crores in 12 months. As at March 15, bank credit expansion crossed the Rs. 1,000 crores mark during the busy season from the end of September 1973 to March 15, 1974. Money supply has continued to increase, feeding the inflationary trends in the economy. The RBI supplements report notes in circulation at 8 February 1973 at Rs. 5,067.64 crores and at 8 March Rs. 6,105.61 crores. The supplements show that upto the end of 1970 the increase in notes circulation in the busy season beginning in November is usually followed by contraction during the slack season from May onward. Since 1971 however this trend has not operated, so that the Rs. 1,000 crores addition in notes circulation in the last two busy seasons have become part of the permanent money supply in the economy. As for the expansion in bank credit, it may be recalled (See Vol. IV page 16) that the RBI set a limit of Rs. 600 crores for credit expansion for the 1973-74 busy season running from

September 1973 to April 1974. As at March 15, this limit had been surpassed and the April 15 supplement shows that at April 5, Bank credit increase was over double the limit indicated at Rs. 1,239 crores, the total being Rs. 7,389.48 crores. The RBI has helped in this process by liberal lending to scheduled banks which went upto Rs. 408.52 crores on March 29, an increase of Rs. 110 crores during March. Also through the bill market they obtained Rs. 54 crores during March and Rs. 155 crores during the season, totalling Rs. 1,032.17 crores as at April 15. Altogether the Reserve Bank help was to the tune of Rs. 563 crores in the credit expansion of Rs. 1,239 crores. Of this expansion, food procurement and export credit increases have been moderate at around Rs. 200 crores. Analysis of the RBI supplements show that RBI did not take all the steps required to keep credit down, as it allowed a sizeable shortfall in cash reserves which it had raised from 3 to 7 per cent of demand and time liabilities on the one hand, and somewhat generously accommodated the banks with loans as noted earlier. Thus commercial bank credit increased by Rs. 1,091 crores to Rs. 7,389.48 crores at April 5, 1974 compared to Rs. 6,311.02 crores on April 6, 1973. Non-food procurement and non-export credit thus increased by Rs. 891 crores plus the Rs. 155 crores on the bill market credit. The credit policy announced by the RBI for the slack season this year is not likely to help cure the inflationary spiral to which credit has made its contribution. The policy seems aimed more to counter the sagging profitability of banks which has in terms of the percentage of working funds fallen from 0.21 to 0.13 in 1968-72. The government attributes this decline to the expenditure incurred in extending banking facilities in unbanked rural areas and to the increased credit to the priority sectors which increased from Rs. 353 crores in 1969 to Rs. 830 crores in 1973. In the slack season, export credit and bank advances for foodgrains procurement are made costlier by one per cent and half per cent respectively, the discretionary RBI advances to the banks will be available at lower than the 15 per cent rate, and on this basis the banks are to do their credit planning for the year May 1974 to April 1975. They are directed to limit the peak level borrowing in the busy season to Rs. 350 crores. The net expansion of credit in the slack season is to be 33-35 per cent of the deposit growth in the coming six months. The credit deposit ratio is to be brought down from 73 to 71 per cent. But how far these guidelines will be effective will depend on a host of factors, including the rate at which deposits increase. The deposit increase during the current busy season has been only 56.9 crores as at April 5 compared to the increase of Rs. 652 crores in April 1973. If the fact that in 20 years bank deposits which were 70 per cent of the currency in circulation are now 200 per cent of the currency is taken into account, then this slow growth of deposit this year against the backdrop of heavy deficit financing means that rather large funds are operating outside of the banking system and to that extent the RBI's controlling powers are even further eroded. In an effort to increase the savings incentive and the deposits in the Country, RBI has from 1 April increased from one fourth of one per cent to one per cent per annum the interest rates on public deposits. The increase in savings accounts is from 4 to 5 per cent and in other categories from 0.25 to 1 per cent, depending on the period of maturity of the deposits. Further as the lending rates were increased last year (See Vol. IV page 16), the deposit rates had to be increased. Similarly bearer bonds can be restructured and their interest rates raised as a one time effort to

bring out black money. But all this is still in the realm of planning and projection. What is now needed is for RBI to reassert its control over credit and currency and stop this continuing increase in both, as a starting point for a reflationary policy.

Grain take-over and distribution: On March 6 the Union government removed all restrictions on the movement of coarse grains within the Country. Against a kharif coarse grains procurement target of 16.5 lakh tonnes, by March 6 only 3 lakh tonnes had been procured. In Vol. IV page 278, the Union government's directive on the relaxation of coarse grain movements by State governments was referred to and from April 1 all restrictions were removed. The result was a 10 per cent decline in the price of coarse grains in States like Bombay and Gujarat where the supply was short, a sharp rise tn prices in States like Tamil Nadu, leading persons who consumed coarse grains (cumbu, varagu, kavuru) to switch over to rice, bringing rice supply and prices under pressure. Second on the basis of the recommendation of the Agricultural Prices Commissions of an increase in procurement prices of wheat of Rs. 10 per quintal over the support price announced on the eve of the sowing season which was a rise of Rs. 19 per quintal over the previous year's crop (See Vol. IV page 278), involving a price of Rs. 90 for indigenous red varieties. Rs. 90 for indigenous common white varieties and Rs. 100 for superior varieties, the Union government after consulting the Chief Ministers increased the procurement price to Rs. 105 per quintal for indigenous common white and Mexican varieties. Third in late March after consultations at the Conference of Chief Ministers, the Union government decided to terminate the takeover of wholesale trade in wheat inaugurated in April 1973 (See Vol. III page 325) and to permit private wholesalers to participate in the procurement and distribution of wheat. The private wholesalers will be subject to a levy of 50 per cent, with the remainder to be sold by the wholesaler in the open market. There is some talk of regulating this open market price and the government proposes to amend the essential commodities Act in order to provide stringent punishment of private traders who violate the conditions under which they have been allowed to re-enter the market. But this is a piece of wishful thinking, because there is really no clear norm by which the open market price of wheat can be restricted. The government estimates the needs of public distribution at 12 million tonnes for the year. Rice procurement is estimated at 4 million tonnes and the wheat procurement target has been fixed at 6 to 7 million tonnes. To cover the deficit the public distribution is to be modified, so that the lowest lotal—7 million tonnes in the last 10 years—will be distributed. Even in 1964, 8 million tonnes were distributed and since then the urban population in which the system is to be concentrated has increased by 50 per cent. This restriction of the public distribution system to big cities, industrial and mining areas means that about half the 2 lakh fair price shops will be wound up. The only virtue of this decision is that the strain on the budget will be lessened as the subsidy will be Rs. 4-5 per quintal compared to last year's Rs. 10-12. In anticipation of this decision, two States, Gujarat and Madhya Pradesh, scrapped the wholesale trade takeover in their States. The wholesale traders have been urging the termination of State take-

over and promised to make available 5 to 6 million tonnes at Rs. 105 per quintal. After the government decision, however, for the reason, that co-operatives, flour mills and State government agencies would be in the market to purchase wheat, the Federation of All India Foodgrain Dealers Association have stated that they could not guarantee any fixed amount to the government but that all these sources together would make available 5 million tonnes. Also on the free market price they claim that they cannot commit themselves to any ceiling price like Rs. 150 per quintal, but that they would keep the prices down to a reasonable level bearing in mind the continued rise in sales tax, labour and transport charges. All these 3 decisions analysed in this section are unfortunate. They make for continued rise in the price of wheat, strengthening the inflationary forces, the regulation of distribution is weakened and the interests of the poor consumer are condiderably jeopardised by cut back in the public distribution system. At the very least, the number of fair price shops must be maintained and increased and every effort should be made to reach the wheat procurement goal of 6 to 7 million tonnes by a compulsory levy on the wholesalers and effective procurement by FCI, the State agencies and co-operatives. It is reported that with the lifting of the State take-over of wholesale trade, last year's hoarded stocks are coming on the market. If this is true, then the lessons to be learned for the future with regard to regulation and control of the wholesale trade should be put into effect this year.

Inter-State levels of development : The Economic Times has compiled an interesting table of selected socio-economic indicators by States. In per capita income terms, Punjab and Haryana, the agricultural granary of the Country, are ahead of all the States, with Bihar, Assam, Andhra Pradesh and Uttar Pradesh lagging far behind. In the industrial field, Maharashtra, West Bengal, Gujarat and Tamil Nadu in that order are at the top in factory employment, gross output, value added. Tamil Nadu has a poor rating in electricity consumption, indicating the parlous base for her industrial and agricultural pre-eminence.

States	Average daily employment of factory workers per thousand total Population (No.)	Gross output in industry per capita (Rs.)	Value added per capita (Rs.)	Consumption of electricity per capita (kwh.) (p)	Industrial consumption of electricity per capita (kwh.) (p)	No. of banking officers per lakh population (No.)	Bank credit of commercial banks per capita (Rs.)	No. of scholars in primary and secondary schools Population (No.) (p)	Motor vehicles per lakh of Population (No.)	Total road length per 100 sq. (kilometres)	Per capita income at current prices (Rs.)
Reference year	*1971*	*1967*	*1967*	*1972–73*	*1970–71*	*1971*	*(end of 1971)*	*1968-69*	*31-3-1971*	*31-3-1971*	*1971-72*
Andhra Pradesh	6.1	103	16	55	29.3	2.5	50.8	221.4	289	35.7	545@*
Assam	5.1	104	20	28	8.5	1.3	17.2	147.3	317	48.9	535@
Bihar	5.0	96	23	61	32.9	1.1	16.3	98.7	136	69.6	402**
Gujarat	16.7	333	74	153	90.2	6.9	119.9	157.9	554	27.8	778*@
Haryana	9.4	195	36	127	47.4	3.7	49.8	135.1	220	29.7	829(p)
Himachal Pradesh	3.2	25	7	41	4.4	4.7	13.6	150.8	134	29.6	563*@
Jammu & Kashmir	2.4	25	8	40	14.3	3.1	20.0	130.4	255	8.5	513**
Karnataka	9.5	118	37	117	77.0	6.0	94.0	148.2	428	46.9	551@@
Kerala	9.7	137	36	84	60.3	4.9	73.0	225.0	404	149.7	561@+
Madhya Pradesh	5.3	95	18	63	36.1	3.0	24.7	104.4	200	25.3	569++
MAHARASHTRA	19.9	426	110	171	105.9	5.9	284.1	164.9	613	26.8	810 (pp)
Manipur	1.9	NA	NA	5	NA	0.9	NA	201.8	257	26.5	424 (p)

Meghalaya	NA	NA	NA	NA	NA	1.7	31.2	NA	NA	NA	NA
Nagaland	NA	NA	NA	13	1.2	1.6	72	225.2	789	30.2	NA
Orissa	3.2	56	11	96	65.7	1.3	11.7	112.2	154	50.8	470(p)+
Punjab	8.8	211	35	166	93.5	6.0	75.7	138.5	303	150.5	995*
Rajasthan	3.3	52	14	58	21.1	2.8	26.9	90.9	339	22.6	575
Tamil Nadu	10.8	221	49	137	74.9	4.5	118.4	173.7	304	59.1	774@
Tripura	1.3	NA	NA	6	NA	1.2	4.3	145.1	256	58.6	NA
Uttar Pradesh	4.7	69	12	66	38.1	2.1	28.2	151.5	154	55.5	598@
West Bengal	19.0	361	85	123	74.1	2.1	182.1	140.2	417	68.0	550
India	9.0	170	39	97	54.9	3.4	92.3	140.2	340	39.2	645 (p)

NA = not available
(p) = provisional
** relates to 1968-69
@@ revised quick estimate
++ preliminary

* relates to 1970-71
+ relate to 1969-70
@= quick estimates.

Inter State distribution licenses: The rising trend of industrial licenses issue during the Fourth Plan starting with 221 in 1969, 363 in 1970, 625 in 1971, and 863 in 1972 fell to 596 in 1973 due possibly to the excess issues of the previous years and the general stagnation in the year. The licenses covered 32 industries, 97 in textiles, 68 in metallurgy, 61 in electrical equipment and 50 in chemicals. The Inter-State distribution given in the following table shows Maharashtra, Gujarat, Tamil Nadu and Uttar Pradesh having received 2/3 of all licenses in 1973. There is a moral here. The development of backward regions requires not only capital but infrastructure and entrepreneurial ability and these four States have a head start in these, so that it is their backward regions which gain from the concessions to the unfavoured regions, rather than the industrially backward States and their backward regions.

States	*Letters of intent*	*Licenses*
Andhra Pradesh	32	29
Andaman and Nicobar	1	—
Assam	5	4
Bihar	22	9
Delhi	28	13
Goa, Daman and Diu	5	4
Gujarat	98	75
Haryana	60	27
Himachal Pradesh	3	2
Jammu and Kashmir	3	1
Kerala	21	10
Karnataka	56	46
Madhya Pradesh	26	11
Maharashtra	240	171
Manipur	—	1
Meghalaya	1	—
Nagaland	1	—
Orissa	8	1
Pondicherry	2	1
Punjab	17	15
Rajasthan	21	8
Tamil Nadu	75	63
Tripura	1	—
Uttar Pradesh	83	60
West Bengal	62	41
State not indicated	28	4
Total	899	596

Industrial growth: The index of industrial production for the period of January-September 1973 registered a decline of 0.4 per cent compared to the corresponding period in 1972. In September 1973 the index at 199 was 1 per cent lower than in September 1972. Shortages of power, raw materials, water, industrial disputes, fiscal and monetary policies and low investments contributed to the decline in industrial output. Though 1972 was a good year relatively with a rise of over 7 per cent for this period, a detailed study of 751 large and medium companies by the Economic Times Research Bureau for 1971-72 shows that there was a fall in the return on owed funds and gross return on sales, particularly in the case of the large companies. Gross profits declined from 18.7 per cent in the previous year to 8.4 per cent and gross return on sales from 11 per cent to 10.6 per cent. 18 of 37 major companies performed well and ten of them in man-made fibres, fertilisers, bearings, glass and pharmaceuticals had substantially high profitability rates. In fact an analysis of the ICICI study of 601 industrial firms for the year ending April 1973 shows that despite the heavy power cut (50 per cent) in this State, and the drought in Maharashtra and power reductions in Punjab, Haryana, and West Bengal, the bulk of the busy season bank credit (Rs. 1,000 crores) went to industry and was not simply because of prices inflation and increase in inventories, but resulted in an increase in production (This is too generalised a statement vis a vis the realities). Production of the basic industries went up from 269.1 in March 1972 to 273.7 in March 1973, capital goods rose from 269.6 to 314.1, while industrial and consumer goods declined. The power cut affected power intensive industries like aluminium whose production declined from 617 points to 578 points in that period. This indicates that the current shortage of furance oil will have similar varying effects on industry. The value of production of chemicals, petro-chemicals, and man made fibres rose sharply, while cement with its statutory price and power reduction stagnated. The study also shows that the investment per job was lower at Rs. 32,890 in 1972-73 compared to Rs. 39,950 per job in 1971-72. But the Annual Survey of Industries for 1968 shows investment per job at Rs. 16,500. In so far as these figures are comparable, inflation has also made for capital intensity in the industrial and employment sectors. On the investment side, there was a marked trend to stagnation and reliance by the firms to the extent of two thirds of their needs on internally generated funds. In a report released in mid April, on the working of public sector industrial and commercial undertakings of the Union government, 101 enterprises are shown to have earned a net profit of Rs. 17.70 crores in 1972-73 against a loss of Rs. 19.15 crores in 1971-72. 67 of them earned a profit of Rs. 104.46 crores and 34 a net loss of Rs. 86.72 crores. The main profit making enterprises were IOC, SCI, BHEL and ONGC while those making losses were HSL, HEC, Neyveli and Bokaro. This trend for breaking even and making profit is continuing into 1973-74 and the future. The 14 public sector undertakings under the Union Ministry of heavy industries continued to do well (See Vol. IV pages 6 & 122), achieving a record production of Rs. 409 crores during 1973-74. Their target was Rs. 429 crores and the achievement was a sound 95 per cent. This means that the units will show a profit for the first time of Rs. 8 to 10 crores against the Rs. 13 crores loss of the previous year. The other units under the ministry—tractors, commercial vehicles, textile machinery-also registered increased production. For 1974-75 the target set is Rs. 550 crores of production and Rs. 30 crores profit and to achieve

this an eight pronged strategy for speedy implementation of its Rs. 426 crores programme has been established. As noted earlier, the official review also shows a good performance by the major petrochemical units despite the acute shortage of raw materials. Production of thermoplastics rose by 7 per cent, thermo-sets by 13 per cent, and synthetic fibres by a high 21 per cent. Organic chemicals increased their production by as much as 70 per cent. All units—ICPL, DMT and GSFC—are turning the corner and making profits.

National Production Front :

Steel : The Fourth Plan which aimed at a target of 12.5 million tonnes of ingot capacity, is ending with a capacity of 8.9 million tonnes only after an investment of Rs. 1,000 crores. The output of finished steel in 1973-74 was 4.3 million tonnes against the small target of 5.3 million tonnes. Saleable steel production by the three public sector plants declined by 186,000 tonnes from 1972-73 to 2.8 million tonnes in 1973-74. TISCO registered the heaviest fall from 1.4 million tonnes to 1.2 million tonnes of finished steel and from 1.9 million to 1.7 million tonnes of ingot production due to the lack of coal and DVC power cuts. What is disturbing is that reduced power supplies continued into April being limited to 40 MVA against its requirement of 100 MVA, which was 80 per cent of its power supply in 1972. It should be allowed to import immediately the equipment for its captive plant to prevent a further decline in production this year. IISCO finished last year with a stabilised production at 386,000 tonnes. It is planning to achieve its full capacity of one million tonnes by 1977-78, with this year's production increasing by 5 per cent. Thus apart from all five steel plants Bhilai, Durgapur, Rourkela, TISCO and IISCO having produced 4 lakh tonnes below their target of 7 million tonnes, all of them continue to face a serious production crisis this year as in Apil they faced the twin problems of a six day stock of coking coal and were carrying a half million tonnes of steel stocks. Bad industrial relations in the railways continue to slow down coke and coal movements to the plants which face a real danger of damage to their blast furnaces. As for the build up of steel ingot stocks, the Rourkela and Bhilai accumulations were because of constraints on movement and lower utilisation of capacity. Hence ingot production in Durgapur and other plants is being regulated to reduce accumulations and the stocks are being sent to Bhilai and TISCO for rolling them into steel, where the production of saleable pig iron is being maximised to match the production of ingots. Meanwhile the Srinivasan Committee set up by the Ministry on steel use has recommended modification of the present production pattern of finished steel products and more extensive use of substitutes for steel like cement, timber, and polythene materials. It computes that if these substitute measures are taken there could be a saving of 7.5 million tonnes of steel in the Fifth Plan and 5 million tonnes in the next 13 years. In this way there could be an economy in steel consumption of Rs. 300 crores a year which is the Country's actual steel import bill. The Committee suggests efficient use of bars, rods, plates, sheets and structurals as a further economy measure. The dual pricing system for steel introduced seven months ago (See Vol. III page 785) has not paid off. While SAIL and JPC are supplying the different categories of steel at controlled prices and the open market prices have been raised as pointed out in Vol. IV page 18 because of the additional capital and running costs, the prices of the end products have risen to heights which have no relation to

the controlled or open market steel prices. Thus while the open market prices of steel strips was raised from Rs. 1,300 to Rs. 1,800 per tonne and open market prices rose from Rs. 2,000 to Rs. 2,200, steel pipes were sold at Rs. 6,000 with similar rises for steel used in constructing industrial sheds, warehouses and factories. There is need now for control over the prices of the end products of steel. The major solution however is to expand steel production upto capacity. For this some restructuring of management and organisation in order to reduce delays in decision making and provide incentives to innovation and initiative is necessary. The decision to restructure HSL making each of its four units an autonomous company, splitting the large subsidiaries into two or more independent companies and the setting up of an all India cadre of steel personnel to improve professionalisation and staff mobility are moves in the right direction. Some of the expansions of the Steel plants that had been decided upon (See Vol. III pages 329, 485, 630 707) are being reviewed. The expansion of Bhilai from 2.5 million tonnes to 4 million tonnes is to be delayed by 2 years mainly because the Soviet exports advise an increase to 7 million tonnes, which with the Country's bottlenecks in power, transport and coal is a rather doubtful piece of advice Also during the Fourth Plan against an allocation of Rs. 98.8 crores for expansion, Bhilai spent only Rs. 16.74 crores. Similarly the feasibility report by Nippon Steel for TISCO's expansion to 5.2 million tonnes at a cost of Rs. 1,600 crores has led to a review of the expansion plan, first because the expansion planned was for 4 million tonnes only and second the cost estimates are high compared to the Vishakhapatinam and Vijayanagar 3 million tonne plants for a cost of Rs. 850 crores. Again the construction schedule of Bokaro has been adjusted so that instead of producing more steel ingots, the commissoning of the hot strip mill and the production of finished steel by March 1975 are aimed at. This kind of review and readjustment of the plants are necessary, as much as the expediting of the work on the 3 smaller plants in the South.

Crude: The crude needs of the Country for the year are estimated at the same level as that of last year (See Vol. IV page 273) at 24 million tonnes, of which 7 million tonnes is the indigenous production which can be raised to 9 million tonnes. The March agreement between the oil companies and the Gulf oil producing countries which has raised the price of Persian gulf crude by the $ 1-1-50 per barrel is likely to increase India's import bill for the year by a further Rs. 100 crores over the Rs. 1,200 crores estimated in the last issue of the Bulletin. While Esso has maintained its price at $ 8.32 per barrel for Arabian light and $ 8 17 per barrel for Arabian heavy crude for January and February. Burmah Shell and Caltex are maintaining their request for a retroactive price rise as analysed in the last issue, Vol. IV page 274. These requests are the subject of discussion between the government and the companies. The companies import 10 million tonnes of crude, the rest being imported directly by the government at somewhat higher prices. In this connection, Iraq has offered a Rs. 88 crores loan on soft terms which will be used to import 2.8 million tonnes of Iraqi crude during the year. Similarly Iran has offered Rs. 140 crores on similar terms to import Iranian crude. It also covers the proposed expansion of Madras Refinery from 2.8 to 3.5 million tonnes. In regard to these loans from Iraq and Iran, the Union Planning Commission has rightly warned the government that (a) these are not really soft loans as, though their interest rate is only

2.5 per cent, their repayment period is 5 years (b) such repayment will all fall due during the Sixth Plan mortaging the foreign exhange and export earning resources of that Plan and (c) the urgent need to economise on petrol and oil consumption will not be attended to. It is necessary not to go in for loans and credits for oil imports as we are doing, as this is simply tying up our future and we need now to develop a plan, as outlined in the last issue to save on this debilitating import item in our economy. For a start the decision of the government at the end of March to fix a ceiling of Rs. 950 crores for the import of petroleum products and crude during 1974-75 is a step in the right direction as it will mean that imports and consumption of crude will have to be cut by 2 million tonnes. This will force a number of economies in the consumption of crude in the Country. For this and as a matter of urgency what is needed is a policy on crude use and consumption which should be part of a policy on fuel and power. The National Energy Board recommended in Vol. IV page 19 should be forthwith set up, establish the policy on crude and energy supply and demand, publicise it and set up machinery for its full and faithful execution. In its absence we will be proceeding, as we are doing now, on an ad hoc basis. Apart from the saving of around 25-30 per cent in the consumption of petrol imposed by the steep rise in prices, in April the Union government announced a 25 per cent cut in the kerosene allocation to each State not as a result of policy but because of the change in the production pattern of refineries giving priority to diesel production and because the import from the Soviet Union which should have been 1,00,000 tonnes has fallen to 30,000 tonnes because of the shortage of small sized tankers. This reduction which is to last through June could however be used by the government and the people to switch-over to cooking gas in the urban centres and to wood and cowdung in the rural areas. Again (as suggested in the last two issues) by rationalising transport routes—cutting back on duplicating long distance bus routes, banning such long distance bus and truck traffic for one or two days in the week, adopting a five day office week which will save 1.3 lakh litres of petrol, curtailing air services and increasing cycles and cycle rickshaws, there could be a 5 to 8 per cent economy in the petrol and diesel consumption. This the first element—economy in consumption of petrol, diesel,and kerosene—in the crude policy recommended. A second element in the policy is to change the product mix of the refineries. If all refineries—present and future—have an ancillary hydro cracking unit or catalytic cracking unit, there can be a 20 per cent reduction in the Country's refining capacity, and a saving of 7.2 million tonnes of fuel oil (4 million tonnes currently consumed plus 3.2 million tonnes naphtha produced by cracking coal). Such installation of hydro cracking units will call for an investment of Rs. 200 crores only. A third element in the policy is the replacement of furnace oil by coal as a primary fuel not only in power stations but also in industrial boilers in engineering and process industries. Since January a 10 per cent cut on the 1973 consumption of furnace oil had been imposed on all industries. From May a further cut of 10 per cent is being imposed on all industries except 33 essential ones. In 1973 4.5 millon tonnes of furnace oil was consumed, of which 2.1 million tonnes were imported. This year because of international shortages and our limited foreign exchange, only 1.6 million tonnes will be imported. This saving of 0.5 million tonnes can be increased to 2.3 million tonnes if the fuel base of industries is changed. But this third potential saving depends on getting the coal out of the

ground and moving it to the tune of only 5 million tonnes. But this must be done promptly and without any let or hindrance. For this the National Energy Board is necessary which may stop the incessant and futile quarrel between the railways, the mines and shipping ministries. A fourth element in the policy is more efficient use of coal. One way is to employ fluidised bed boilers in thermal and industrial power plants where the buried pipes transmit heat by conduction instead of radiation. Also the gassification of coal must be pushed ahead. An economically viable plant at a cost of Rs. 40-60 crores using 50 per cent indigenous equipment has been prepared by CFRI to produce oil from coal. EIL is working on its commercial feasibility which when used will save 1 million tonnes of oil in May. A fifth element is to use ethyl alcohol as a blending agent or substitute for petrol for auto engines or farmers' diesel operated pumpsets. Tamil Nadu which produces 3 million litres of industrial alcohol can become self sufficient in running its pumpsets and save on diesel and electricity. A sixth element is to save on lubricating oils. Indian cars consume the highest amount of lubricants in the world—8 times that of US cars and 5 times that of UK cars. R & D is needed to develop the right kind of lubricants also for the aluminium industry which can no longer get the foreign lubricant on which it has been run, for our aircraft, for our industrial machines which are losing Rs. 53 crores per annum or Rs. 2,(00 per minute through using the wrong lubricants, each steel plant Rs. 12 crores, and medium industries Rs. 16 crores. A seventh element in the policy is the use of wind mills. The W.P. 2 windmill designed by NAL and developed by a private manufacturer in 1966 but not used because of the lower cost of diesel, can now be installed in clusters of 10 each at suitable locations in Gujarat, Rajasthan and Tamil Nadu, which can operate in low wind velocity areas (5 to 8 m.p.h.) for minor lift irrigation, delivering 30,000 gallons of water per day. To prevent a breakdown of the machine, the farmers should be trained in its use and the agro-service centres strengthened to ensure maintenance. Action on this programme should be started immediately. Finally all efforts should be concentrated on increasing the indigenous supply of crude. Currently indigenous crude production is at 7 million tonnes per annum. This onshore exploitation should be increased to 9 million tonnes this year and by the end of the Fifth Plan to 12 million tonnes. In early March a new structure at Charali in Assam near the Rudrasagar oil field has been opened up and similar intensive exploration in Arunachal Pradesh, and Gujarat are needed to reach this additional 5 million tonnes. Bombay High is coming up well with the first oil strike at 962 meters, the second at 1,400 metres and the third at 1,600 metres. By 1976 the offshore production in Bombhy High and a few wells in the vicinity should be producing and from these offshore sources, there should be another 5 million tonnes by the end of the Sixth Plan. This means that by 1979-80 indigenous production should total 17 million tonnes. Burmah Oil which has a 50 per cent partnership with the government in Oil India has offered its services for offshore explorations. It has set aside 2 millions for a seismic survey in any area chosen by government and will later join with other companies in drilling. A number of foreign companies such as Citizens Service International, and Occidental Petroleum have also made tenders. The government is unwise in wasting time bargaining and negotiating to bring their share down below that granted by Indonesia—to less than 40 per cent of the oil produced and that too for a period of 15 to 20 years. Now is the time to

arrive at speedy agreements on recognised international terms, so that the policy of stabilising imports at the current level of 16 million tonnes during the Fifth Plan and gradually reducing it during the Sixth Plan might be effected. The crude consumption target must be reduced from 37 million tonnes to 30 million tonnes for the Fifth Plan by the various economy measures suggested and internal production must be raised to 17 million tonnes in the Sixth Plan. Then the economy can stand the cost of importing the balance. Such are the tasks before the National Energy Board.

Coal: The parlous position of coal supply analysed in the last issue (Vol IV page 272) continued through March and April. The reports from the ministry of mines and from the railway ministry continued to be contradictory, each blaming the other for the serious coal famine. The ministry of mines states that the production of coking coal was 33,000 tonnes per day in February compared to 32,000 tonnes per day in January, that the Jharia Raniganj coal fields after an initial setback after nationalisation are producing at the annual pre-nationalisation level of 10 13 million tonnes, that non coking coal which had slipped from 7.35 million tonnes in 1971 to 7.08 million tonnes in 1973 has now recovered to its old level and that it had over 6.5 million tonnes of coal at the pitheads which needed clearing. On the other hand the railways point out that they had been asked for only 34,772 wagons in March by BCCL compared to 38,991 in November 1973, that wagons are left behind or return empty for want of coal, that coking and non coking coal production was on the decline and that pithead stocks are declining, from 4.56 million tonnes in May 1972 to 3.33 million tonnes in December 1973 and in the case of coking coal from 1.36 million tonnes to 7.9 lakh tonnes. And so it goes on endlessly What is not contested is that there is no coal adequate to any user. On March 19 the Railway Board announced a sudden fall in coal stocks down to 3 days running, and a number of trains in the South and other regions were cancelled. The HSL steel plants and TISCO production have been disrupted as noted earlier. Thermal plants in Tamil Nadu had to shift to very scarce fuel oil from coal, and all the plans for switching from an oil base to a coal base in industry just sounded so much hot air. The only way to end the internecine warfare between the railways and the coal authorities and co-ordinate their activities is through a high power National Energy Board. Meanwhile a series of measures are being undertaken to improve coal availability (a) The production of coal is being increased without bothering too much about wagon availability. This in any case is needed, as the government has before it the serious recommendation of the fuel policy committee to increase the Fifth Plan coal target from 135 million tonnes to 165 million tonnes in view of the oil crisis. The government has accordingly decided to increase the 1974-75 coal target to 95 million tonnes and so to step up production regardless of their transport by the railways. This is wise because the wagons can be found (b) To explore new coal fields, the government has a request from the Coal Mines Authority for approval of a programme for bulk purchase of standardised machinery and equipment (c) An incentive scheme has been introduced to promote improved delivery and work (d) Quarterly and monthly targets of coal production are fixed for each colliery with a programme for a seven day four shift work in selected collieries (e) Transport is being improved and co-ordinated and for some users— Bokaro a ropeway being constructed connecting it with Dugda and Kargali

washeries (f) A number of geology, mining and machinery specialists are now recruited and are working in the department. (g) The second mine cut in Neyveli with its reserve of 2,000 million tonnes of lignite is being taken seriously. It is hoped that with these short term measures the availability of coal will reach the target of 95 million tonnes this year.

Railways: The railways have also been performing badly. In March their earnings fell by Rs. 35 crores—after the 1974-75 budget was prepared. 30 per cent of the wagons are over used and sick because of the backlog of 50,000 wagons which wagon manufacturers have not delivered. The delivery delays in turn are due to the failure of the railways to supply wheel sets. Durgapur failed to supply the sets and so they had to be imported and there have been endless delays in obtaining permission to import. In the meanwhile their costs have escalated. Over 40 diesel engines are unused because their spares have to be imported and after long delay they are being airlifted from the U.S. The turn around of wagons by the users is also another cause of delay. In this sad situation, there is no integrated plan to move goods including coal on some kind of a priority basis. One decision made in early March to set up 9 railway service commissions replacing the single railway service commission to deal with recruitment is a small step in the direction of decentralisation of the monolithic structure of railway management, which should be pursued. In a vast Country like India, railway management cannot be overcentralized. The Railway Board should deal with integrated wagon movement plans, priorities for transportation and leave the details of management to zonal managers. For the immediate present the railway and mines ministries should work out a joint programme for the speedy movement of coke and coal and re-organise the sidings for such effective and quick movement from the washeries to the steel and thermal plants in the Country.

Aluminium: Aluminium production is under severe strain from power cuts in Tamil Nadu and Karnataka, while the units in UP and Orissa are not doing so badly. Taken as a whole in 1973 aluminium production was 66 per cent of capacity, 1.55 lakh tonnes against a capacity of 2.3 lakh tonnes. The production was lower by 13.3 per cent compared to 1972. The sharpest decline was in Madras Aluminium and Aluminium Corporation of India—by 35 per cent, while the production of Hindustan Aluminium and Indian Aluminium fell by 18 and 2.7 per cent. For the current year UP, Karnataka and Tamil Nadu face critical power shortages so that there will be a further reduction in the production of units in these States. The 6 000 tonnes additional capacity of Madras Aluminium will remain idle. Further the 1967 price of Rs. 4,600 per tonne which was reduced in 1971 to Rs. 3,970 has not been revised despite escalating costs. One unit has already closed down and the expansion programme of Hindstan Aluminium has come to a stop. Two steps should be taken for the future in addition to the building of the Korba and Ratnagiri plants. The price of aluminium must be raised on the basis of the recommendation of the Bureau of Industrial costs and future units should be developed in the power surplus state of Himachal Pradesh, Kerala and Orissa. It is unlikely that the Fifth Plan target of 4 lakh tonnes capacity and 3.7 lakh tonnes production will be achieved in view of power shortage which will face the States where the units are located throughout the Plan.

Textiles: Controlled cloth production for the year is to be doubled from 400

million sq. metres to 800 million sq. metres Further the ex-mill prices of these varieties are increased by 30 per cent and the distribution margin increased from 12½ to 20 per cent. The rise in price due to cost escalation was overdue but together with the rise in wheat prices it will have an inflationary effect and affect the common man's meagre budget. On the side of the textile industry the rise does not solve its problem. The cost of production is claimed to be around Rs. 2 95 per metre, the price till now Rs. 1.25 per metre and the increased price Rs. 1.62 per metre. Thus it will be losing Rs. 1.33 on every metre and as it has to produce 800 million metres the loss would be over Rs. 100 crores. This will be made up by raising the prices of superior varieties and an increased export subsidy in order that the export effort is not reduced. To add to its problems, cotton prices reached in Madras their highest point in Indian textile history, the increase being Rs 500 to Rs 1,200 per candy. The CCF operations in South India and the non-availability of synthetic fibres have also pushed up prices. It is also expected that during the year statutory control will be imposed on the production, price and distribution of sarees, dhotis, shirting, long cloth and drill made out of medium yarn. About 2,000 million metres of cloth representing 45 per cent of cloth production in the mill sector falls into this medium category and ten per cent of this is to be controlled. Here again the price problem comes up and there will be an increase in its price, similar to that of the controlled cloth. The Industrial Development Ministry with 103 nationalised mills wants a price rise to cover the full rise in costs. The Commerce Ministry and the Bureau of Industrial costs and prices are for a 25 per cent price rise. The issue is still under debate and involves a trade off between further inflationary pressure and the employment prospects and realities of the nationalised textile mills.

Sugar : With international sugar prices turning around from the high point referred to in the last issue (Vol. IV page 277), falling from £300 per tonne to £215 per tonne in March, the sugar production situation in the Country is not very bright. As noted in the last issue, the production trends are low, being 25.19 lakh tonnes upto the end of February this season, compared to 26.59 lakh tonnes for the same period of the last season. Because of the shortage of coal and power, the sugar season in UP is ending earlier; the UP crop has been affected by the pyrilla insect and the late winter rains, the Maharashtra production is lower; and, the sugar recovery has declined by 1 per cent involving a 10 per cent drop in sugar production. The estimate for this season seems likely to be 39-40 lakh tonnes rather than the 45 to 51 lakh tonnes forecast in Vol. IV page 145. The chances of sugar exports to take advantage of the high prices are dim. Internal consumption which was 40 lakh tonnes in 1970-71 is now around 44 lakh tonnes. The government is however releasing only 3.05 lakh tonnes a month to keep down sugar consumption. The result is rising sugar prices in the open market. All told the internal consumption this year may be 39 lakh tonnes, leaving the carry forward stock of 8.4 lakh tonnes as a needed buffer. With a view to increasing production, and taking into account the tariff commission recommendation set forth in the last issue (Vol. IV page 277), the government liberalised the excise duty rebate, allowing a higher rebate for sugar produced during the period April 1 to September 30, 1974 in excess of 180 per cent of production during the corresponding period of the previous year. It will be recalled that in October

the rebate of excise duty granted was Rs. 20 to Rs. 46 per quintal for excess production. New sugar produced in between December and March in excess of 110 will get Rs. 220 per quintal, in addition sugar produced in excess of 100 per cent from April to June will get the Rs. 30-40 rebate per quintal. It is hoped that these measures will provide the incentive to the mills in the other States to produce at the level of the last season and make up for the shortfall in UP. In addition the Indian Sugarcane Development Council has approved in March an annual action programme of sugar cane development for the different States. so that the target of 141.8 million tonnes may be attained.

Machine Industry: With a view to prodding the economy out of its stagnation and helping in the fuller use of existing capacity, machinery manufacturing units were given greater freedom to diversify their production and procedures for this purpose were simplified. The units had the flexibility to produce many types of equipment with their fabricating facilities to which appropriate design and engineering input changes are made. Now with the facilities made available to them to diversify further into new items of equipment, there will be fuller utilization of fabricating and design capacities and a quicker production schedule. The procedures for obtaining approval of diversification of production have been made automatic and the government authority will move quickly in the matter. In April, a pipe mill for producing spiral welding pipes at the Rourkela Steel Plant with West German co-operation has been approved. The mill will start functioning in January 1976. Similarly the Bhopal unit of Bharat Heavy Electricals has developed a new LT capacitor which will withstand out-door weather conditions and voltage variations.

Tyres: In April the government announced the removal of control on tyre prices. The Bureau of Industrial costs and Prices has recommended price increases for different varieties ranging from 15-50 per cent. The government at the Union and State levels is to be associated to ensure equitable distribution of truck and bus tyres. A central co-ordinating Committee with representatives of the ministries of Industrial Development, Defence, Transport and Vehicle and transport manufacturers, assisted by 16 regional committees including State governments will monitor distribution arrangements. It is to be hoped that with this measure the production of tyres will increase to meet more adequately its growing demand.

Fertilisers: The twelfth plant of the Fertiliser Corporation of India is the Paradip Fertilizer project whose establishment was begun in April. Its annual output of nitrogen, phosphorus and potash will be 7,81,200 tonnes. Its location at Paradip will help the import of 2 million tonnes of raw material that it needs, with the necessary mechanisation for the unloading of ships, the storage tanks near the jetty for storing fuel oil and ropeway to deliver the rock phosphates to the factory. Its annual two type complex fertiliser production will be 14.4 lakh tonnes which will contribute an additional 7.5 million tonnes of foodgrains annually. It should go onstream by 1979. Meanwhile for this year the fertiliser availability continues to be short. For the kharif season, the situation is not bad as the availability is estimated at 17.53 lakh tonnes against the needs estimated at 15.51 lakh tonnes But this availability is estimated on the assumption that the power shortage will not reduce the production in the plants. The Nangal fertiliser factory however faces a 40 per cent

cut, UP is also planning a power cut on its fertiliser units, so that the 8.16 lakhs of nutrients expected to be produced in the kharif months may be reduced. With regard to the rabi season fertiliser needs, there is a serious problem. Against the requirements of 28.75 lakh tonnes, the Union Planning Commission estimates the availability including imports at 14.11 lakh tonnes, which is a 50 per cent deficit.

Agricultural Production: To deal with the serious shortfall in fertiliser availability this year, the Union government after consultation with agricultural scientists has given the States some guidelines for use by farmers. For rice, it is recommended that 5 tonnes of compost per hectare be applied before transplanting. In addition one dose of 40 kg. N per hectare for high fertility soils and 60 kg. N per hectare, for low fertility soils along with weed control are suggested. For irrigated cotton 3 to 4 tonnes of compost per hectare one major dose of 40 kg. N 2 months after sowing and the rest of the nitrogen to be sprayed thrice at the rate of 6 kg. per hectare are suggested. For sugarcane, the entire nitrogen is to be used before the monsoon. Rhizobial culture for groundnuts, and use of super phosphates are recommended. These are guidelines which have to be adjusted to local conditions and should be accompanied by training farmers in their use. The foodgrains production prospects for the year are not encouraging. In some States like Tamil Nadu (to be treated under the State section) and Andhra Pradesh food production is normal. Due to growing suitable varieties of HYV over 13.6 lakh hectares and efficient management practices, kharif production in Andhra Pradesh is expected to be 41 lakh tonnes of rice. Similarly jawar production is good, being 10–15 quintals per acre. Karnataka also reports a record foodgrain harvest of 61 lakh tonnes. Its procurement target of 2.5 lakh tonnes of paddy is being reacted. By the end of February government procured 1.3 lakh tonnes, and will reach the target through collecting 1.5 lakh tonnes from farms, 1 lakh from transporters, and buying 1 lakh tonnes in the open market. On the other hand the March—April report of the rabi wheat crop is poor. Against the target of 5.8 million tonnes, the wheat harvest this year is expected to be only 4.5 million tonnes. The gram crop is expected to be at the same level as last year's - 2.5 lakh tonnes. Oilseeds will be down from 82,000 tonnes last year to 80,000 tonnes. Lack of fertilisers and scarce irrigation due to diesel shortage were the main limiting factors. For the Country as a whole the rabi oilseeds is anticipated to be 2.8 million tonnes which with the good kharif harvest of 6.2 million tonnes produced an increase of 2.7 million tonnes over last year. The Country's edible oil needs are 3.5 million tonnes which require 10.5 million tonnes of oil seeds. The shortfall of 1.5 million tonnes will have to be imported. The production of pulses this year is likely to be the lowest since 1957 at around 8 to 8.5 million tonnes, against last year's production of 9.4 million tonnes and the target of 12.2 million tonnes. Against an annual average of 5 million tonnes, gram production this year will be less than 3.5 million tonnes due the frost and the February cold spell in the Northern States. Despite the Union Ministry's assurance at the end of February that the foodgrain production for the year will be 110 million tonnes which in March was raised to 114 million tonnes, the economic survey (see Vol. IV page 269) which placed it at around 110 million tonnes, the latest estimates place it around 100 million tonnes. Assuming that the Kharif production was 67 million tonnes, the rabi harvest is likely to be wheat 22 million tonnes, gram 5 million tonnes and pulses and barley 5 million tonnes, giving a rabi

total of 32 million tonnes, giving the total of 99 million tonnes for the year. The wheat production shortfall is again due to failure of winter rains, fertiliser shortage, power cuts, diesel scarcity and diversion to other crops as a reaction to last year's government takeover of wholesale trade in wheat. This means that the wheat procurement target is likely to be the actual procurement of last year—at 4.7 million tonnes and to that extent the public distribution system will be weakened. This rather gloomy foodgrain production and procurement forecast might be at the back of the Union government's decision to import wheat. In mid April it was reported that the Indian Supply Mission in the US purchased 4 lakh tonnes of wheat at a very low price of $ 3-6 per bushel. Wheat prices which last year ruled at $150 per tonne (See Vol. III page 627) and the freight at $40 per tonne, have fallen to low levels because of the very good US crop. Similar purchases of wheat in Canada and Australia are reported. The government procurement at mid April was 30 lakh tonnes of rice and 2 lakh tonnes of coarse-grains The foodgrains stocks at the time were 2.7 million tonnes with the Union government and 17.95 lakh tonnes of rice, 4 58 lakh tonnes of wheat and 4.28 lakh tonnes of coarse grains—which were an adequate operational stock In this situation, it is also essential to conserve our foodgrains. It has been computed that modernisation of rice milling can save 8 to 10 lakh tonnes of rice which are currently lost in the traditional hulling and disc shelling system, apart from the possibility of extracting 2.8 lakh tonnes of edible oil from the rice bran now used as cattlefeed. FCI which has 18 modern rice mills and is setting up 4 more, together with the State Corporations should increase these establishments and educate the millers in the advantages to them of modernisation. Also the increasing use of indigenous tractors is essential. Against the licensed capacity of 1.47 lakh tractors, the installed capacity is only 40,000 with the actual production at 25,000 or 71 per cent. Fuller utilisation of capacity of this vital input calls for a price rise to meet the increased cost of steel and its other raw materials. Further HAL has designed the first agricultural aircraft for aerial application of fertilisers and pesticides. 100 such aircraft are being supplied to the Union and State Ministries of agriculture to help increase the farm yields and combat various pests. In collaboration with the Soviet Union it is proposed to establish merino sheep farms in Sikari (Rajasthan) and Bhainsari (UP) and breed Pashmino sheep in Jammu and Kashmir in order to increase the production of quality wool in the Country. Also sugar beet farming is to be further developed through HYV seeds imported from the Soviet Union. The National Commission on Agriculture has drawn up a comprehensive 15 year programme to develop the deserts of Rajasthan, Haryana and Gujarat at a cost of Rs. 423 crores. The plan is focussed on the development of selected export oriented aspects of agricultural commodities and on forest research and development. The Arid Zone Institute in Rajasthan could provide the research backstop for the plan. The 1973-74 record of co-operative societies is both heartening and dismal. They range over a wide area of economic activities operating in (a) the transport industry, (b) house building, (c) retail trade as fair price shop (d) milling rice and wheat, (e) ginning cotton, (f) crushing oil seeds, (g) distributing fertilisers, (h) sugar mills (which produce more than half the nation's sugar) (i) providing farmer's credit and (j) mobilising deposits which in the decade 1961-72 have increased fourfold to Rs. 1,275 crores, increasing their ratio of deposits to GDP from 2.2 per cent in 1961 to 3.2 per cent at present. But there is also the dark side.

A large number of co-operatives are chaired by nominated persons and are not the elected representatives of the members. To that extent the co-operatives cease to be an exercise in economic democracy and are open to influence peddling and corruption. During the Fifth Plan the election of the Chairmen must be made obligatory. Second the co-operatives have not weakened the hold, of the usurious money lender over the farmer and the landless labourer except in 4 States. This should be their major aim in the current Plan, through their acting as bankers in the rural areas as recommended by the National Commission on Agriculture. To help in this development, the local authorities could use rural co-operative banks as their banks. Finally the large overdues averaging 31 per cent for the Country (double that in 2 States) must be brought down by rigorous enforcement of the laws. The co-operatives are an important instrument of rural development and agricultural regeneration and its potential should be fully used.

Exports : During the first ten months of 1973-74 exports increased by 23.8 per cent compared to the first ten months of 1972-73. Against the year's target of Rs. 2,072 crores, the exports from April 1973 to January 1974 totalled over Rs. 1,920.6 crores, with a good chance that the year's export terget will be exceeded. On the other hand the increased cost of crude and petroleum products imports, fertilisers and non-ferrous metals, the cost of cotton imports due to the short crop in the current year and the liberalised imports of spare parts for the maintenance of machinery announced in April (Rs. 20,000 from Rs. 10,000 for large units and Rs. 8,000 from Rs. 4,000 for small units) mean that the import bill is rising even faster than export earnings and the deficit in the balance of payments will be larger. This had led first to the Union government cutting back the foreign exchange allotment for crude from the requested Rs. 1,200 crores to Rs. 900 crores as noted earlier, and for fertilisers from Rs. 600 crores to Rs. 450 crores. Second against the exchange reserves in the IMF other than gold and SDRs of Rs. 347 crores and with gold and SDRs at Rs. 700 crores, at January end (down from Rs. 909 crores in July 1973,) the government drew down as at April 62 million SDRs or $74.4 million to meet our foreign exchange crisis. It had drawn Rs. 60 crores from the Funds compensatory financing facility in February. These were the first IMF drawal by the Country since 1967. To boost our exports futher, a liberal import policy was announced in April for six months, in the hope that the situation with regard to foreign aid and foreign exchange resources will be clear by that time. (This is part of the new 6 month decisions referred to earlier under the Annual Plan). Under the new policy, last year's licenses are validated automatically, imports maintenance has been liberalised, non-priority units receive priority treatment if they export 20 per cent of their production, any unit which exports 10 per cent of its product will be eligible for preferred sources of financing—all involving Rs. 165 crores of foreign exchange. The Country's shawl exports mainly to the oil exporting countries are Rs. 75 lakhs and can be expanded if the looms are modernised and the banks can advance funds against their drawbacks. Cardamom exports are increasing in value being Rs. 9 crores in 1973-74, compared to Rs. 8 crores in the previous year. The increased earnings are due more to higher prices than to the export volume which has fallen due to the poor crop this year. Coir exports in 1973-74 earned Rs. 15.5 crores, bettering last year's Rs. 14.96 crores and being the highest in

the industry's history. A large export of 75 million tonnes of iron ore pellets to Iran over the next 15 years at the rate of million tonnes a year has brought a credit of $300 million for the project. In March India agreed to set up in the United Arab Emirates joint projects in the fields of fertilisers, refineries, cement plants, steel mills and ancillaries as a means of increasing mutually advantageous trade relations between the two countries. The export effort to the Gulf countries in Basmati rice, sugar, engineering goods, jute tea, spices, fresh fruits and vegetables, meat and meat products, cotton textiles, glass and rubber manufactures, gem and jewellery is to be expanded to contribute to the target of Rs 2,500 crores that has been set for this year. Again the woolen industry is planning an all out export effort to take full advantage of the new multi-fibre GATT agreement, so that by the end of the Fifth Plan, Rs. 125 crores can be exported in woolen goods. For this effort the industry has drawn up modernisation plans costing Rs. 175 crores. Kirloskar obtained export orders from the UK for Rs. 25 lakhs of oil engines in March. In 1973 its exports amounted to Rs. 5 crores. The exports of engineering goods are on the increase. Between April 1973 and February 1974 Rs. 150 crores of goods to both developed and developing countries have been exported compared to Rs. 140 crores for the whole of 1973. The only obstacle to further increases are shortages of raw materials, power, shipping space and coal supplies. Textile policy is being developed to increase spinning, weaving and processing capacities in the textile industry by 25 to 30 per cent in order to generate an export surplus after meeting the growing domestic demand referred to earlier under the controlled cloth sectors. Against a target of Rs. 133.15 in 1972-73 the export achievement was Rs. 160.51 crores, and against the 1973-74 target of Rs. 175 crores, the achievement is likely to be Rs. 225 crores. There is a trend for the developed countries to give up textiles manufactures and specialise in more sophisticated goods. There is thus a great opportunity for India to export textile goods in much larger volume and it is to this that the textile policy should be addressed. Straws in the wind in this are: The UK, while not accepting India's demand for quota free export of handloom goods, has increased the duty free quota of cotton handlooms from one million to 8 million sq. yards and silk handlooms from 40,000 sq. yards to 1 lakh sq yards. The Indian government is negotiating to include towels and bedsheets in the cotton handloom quota. The US has also agreed to import cotton handlooms without restriction and the ECM has agreed to double its duty free quotas to $2 million each. In this regard the government's plan to set up an Export Bank to finance the modernisation and capital needs of export oriented industries is an urgency and should be acted upon. In the meanwhile the RBI credit policy for the coming months should be so administered that there is no let up in the export effort The maximum interest on export credit on other than deferred payments has been increased from 8 to 9 per cent and on deferred payments exports from 6 to 7 per cent. Similarly the concessionary rate of 9 per cent on export credit has been tightened. These revised regulations should be so executed that the export houses and their mounting efforts are further encouraged.

Aid: The major development in the aid field for the Country in March/April was the realistic assessment of the balance of payments gap and foreign aid needs of the Fifth Plan by the World Bank. The draft Fifth Plan based its balance of payments computation on the basis of international prices of crude, fertilisers, non ferrous metals which have changed drasti-

cally by nearly 400 per cent in the case of crude and 200 per cent in the case of fertiliser and non-ferrous metals. In addition while the draft Fifth Plan assumes no import of foodgrains, the Bank recalculating the import needs at current prices and assuming that the Country will have to import around 10 million tonnes of foodgrains during the Fifth Plan, estimates that what the draft Plan calls "the draft on foreign savings", that is, foreign aid will be $12 billion rather than $5 billion estimated by the Draft Fifth Plan. This assessment of the World Bank is realistic. It was discussed at a closed meeting of the Aid India Club in Paris in early April at which the World Bank assessment was broadly endorsed and it was hoped that the $2.5 billion aid needed would be shared between the consortium members (with a 6 per cent increase), the Soviet Union and Eastern Europe and the oil producing countries. The debt rescheduling arrangements should also be discussed. The government is negotiating 3 IDA loans. One $150 million for industrial imports to cushion the steep rise in the price of imports, a second for $55 million for Trombay fertiliser expansion similar to the $58 million IDA credit to Nangal in January and a third $25 million credit for importing raw material for the small scale sector. Also in March, the Japanese aid of 11 billion yen for the Bhatinda fertiliser project was concluded. In April IMF offered the Country $550 million in assistance, including a special loan of $250 million to cover the increased oil import bill in 1974-75 IMF has given the Country the green signal to tap the first and second credit tranche of $235 million each, of which $165 million of the first tranche has been utilised. The IMF is also making available an additional $250 million under the special scheme to aid industrialising countries to meet their large oil import bill.

International :

Bangla Desh: In accordance with the agreement (See Vol IV page 197) and following the recommendations of the Indo-Bangla Jute Study team, Bangladesh's sale of jute to India by September will amount to 6 lakh bales and during the Fifth Plan a total of 1.3 million bales. As noted in the earlier issue of the Bulletin, India will not increase its jute acreage but will achieve its targetted production of 80 lakh bales by 1978-79 through intensive cultivation. To improve the competitive position of jute manufacturers in the world market, the production of raw jute in the two countries will be rationalised and using effective techniques of production, the cost and price structure will be kept low. In particular Bangla Desh is to ensure supply of jute fibre and India should be ready to buy Bangla Desh jute for the Indian jute industry. Unlike this year, when India exported 5 lakh bales of raw jute, in future years Indian exports are to be limited to 1 lakh bales. In this manner a rational jute policy will be followed by the two countries in relation to their internal economic requirements and to take advantage of the growing world demand for jute goods. Bangla Desh has also continued supplying newsprint to India in accordance with the agreement at some cost to its own internal needs. With the agreement to liquidate the residual, humanitarian problems resulting from the 1971 war, Bangla Desh is now moving to resolve the external debt and mutual economic problems with Pakistan.

World Monetary Reform: The March meeting of the deputies of the Committee of 20 set up by IMF on World Monetary Reform confirmed the fact that it will not be possible to establish agreement on World Monetary Reform by the deadline July

1974. The crucial issues of convertibility, exchange rates, the nature of future assets, the link between SDRs and development assistance are all unresolved with no agreement on any point between the developed and developing countries. The oil crisis and the development of an IMF special facility for member countries to mitigate its effect on their balance of payments are now in the forefront. At the March meeting agreement was reached on five smaller issues, to be confirmed at a further meeting in Paris in May. A new set of guidelines were established to mange floating currencies. First if there are large departures in the the float, the Central Bank should intervene against the market trend. Second the government of each floating currency should work out with IMF a normal zone or target area for its effective exchange rate. Third each country should discuss and agree with the IMF as to the desirable level of its reserves. Further there was some agreement on the steps to strengthen the IMF board and some easing of restrictions on the use of SDRs. The gold price issue was also discussed but the substance was postponed until the ECM had defined its position at its meeting in April. At the April meeting in Zeist, Netherlands of the ECM finance ministers, there was first agreement to increase sensibly the official price of gold from the rate of $42.22 per ounce to nearer the free market price of $176 per ounce. This rather important proposal is to be further discussed among themselves. Italy and France hold half their reserves in gold and will profit a lot. UK is opposed to the proposal and does not want to give gold too important a role in the reformed monetary system. The US is totally opposed to the proposal as it holds that it will lead to uncontrolled world inflation and hurt the Western monetary system. It points out that one result will be to give Soviet Union's huge gold stock a great advantage and enable it to purchase Western currencies at very low rates. Thus the whole outline of reform is wide open and under unresolved discussion. The March meeting may have however turned out to be more important than realised. It is now time for the governments to ask themselves if the regime of fixed exchanges on which the whole monetary reform discussion and outline hinges should not be abandoned, and a completely new set of ground rules worked out on the basis of a system of floating exchanges. The exchange rate is first a function of real rates of growth and exchange and secondly an instrument of national fiscal, monetary and economic policy. If this is true there is no sanctity about fixed exchanges, if the World economy is not fixed but moving, fluctuating and being transformed. If the starting point of floating exchanges is accepted by the IMF annual meeting in September, then the ground rules of the reformed system can be worked out by 1975 July. In other developments, in late March, France announced the abandoning of the two tier Franc - the financial franc and the trading franc, as it was not any longer a member of the European floating block. It had pulled out of the bloc in January (See Vol. IV page 198), and so the two tier currency was no longer necessary. In April gold appreciated in value in the World Money markets while the dollar after some rise fell sharply, reflecting the position of the US economy in relation to Europe. The UK government announced at the end of January, the raising of a $2.5 billion foreign loan to be repaid over a 10 year period to cover its very heavy trade deficit which in February amounted to £ 42.9 millions and in January £ 38.3 millions. In fact the balance of payments pressures on industrial countries due to the oil price rise has begun with a rather heavy decline in their reserves during the period November 1973 to January 1974 to the extent of 7 billion SDRs. While the US reserves do-

not show a decline as it is the least affected by the oil crisis. the reserve losses of Japan, France, UK and other European countries were significant. The industrial countries in 1973 increased their exports by $374 billion (35.7 per cent over 1972) and imports by $384 billion (36 7 per cent over 1972). The deficit on their trade account was thus $10 billion. Germany doubled its trade surplus and the US deficit was cut back. In this volatile trade situation, there is little hope of basing the World monetary situation on a system of fixed exchange rates.

The World Oil crisis and the UN Conference: As noted in the last issue (Vol. IV page 284), the UN special session in April dealt with the problem caused by the oil price rise and the price of the exported goods and machinery from the developed countries. The Secretary General termed the session a turning point in international relations which could lay the foundation for a "world wide economic system founded on equity and justice". The Conference met against a series of good technical papers prepared by UNCTAD and the World Bank. UNCTAD's first paper was a little misleading, at least in the Secretary's summary report wherein he refers to the terms of trade between primary products and industrial goods having improved by 45 per cent, wiping out the losses suffered by the developing countries in the sixties and the seventies, This is a half truth. Because the same UNCTAD first study states that between 1970 and 1973 tea fell by 32.9 per cent, jute by 30 per cent, rubber by 37.1 per cent and iron ore by 12.1 per cent in relation to manufactured exports. It also states that the prices of tin, manganese ore, bauxite, alumina, rubber, copper and iron ore will fall later this year, as will sugar and coffee prices, because of the recession in the developed countries, while the price of wheat and rice will continue to rise. In a second note UNCTAD reported that the trade terms of developing countries other than petroleum exporters deteriorated by 15 per cent between the mid fifties and 1972. —representing a loss of $10 billion. Its conclusion is that without basic changes in international trade and payments system together with the control of world inflation, just aid and more aid would be counter productive. The World Bank report basing itself on all the main changes that have occurred in economic patterns in increased costs of energy and manufactured goods imports makes projections which show that the Second Development Decade target of 6 percent GDP growth will not be attained by the developing countries. India, Bangla Desh and Sri Lanka will require substantial aid and additional external capital to sustain growth. It concludes that developing countries, after reducing their reserves and drawing on IMF, will in 1974 need 2.6 billion of external capital and in 1975, $ 6.8 billion. In the years 1976-80 to achieve modest growth rates, the developing countries will need $10 to 12 billion of additional external resources. IMF is working towards agreement with Arab States on a special facility financed by them to enable oil importing nations to draw from the fund to meet the oil price induced payments deficits. What emerged at the UN session is agreement on an emergency fund to help the most severely hit countries like India facing high import costs of oil, food, fertilisers and non-ferrous metals. This is far from a more general roll back of prices that is the real answer. In its absence such emergency relief measures are a practical palliative. The other outcome expected is a Declaration on the Establishment of a New Economic Order. The Special Session has thrown up a new international term - COMSA, countries most seriously affected. The session after

six weeks of deliberations and innmerable negotiations between the group of 77, oil producers, US and Western countries, USSR and Eastern Europe and China, adopted (a) Declaration of Principles aimed at a new economic order in which the poor and rich nations will share the earth's finite and scarce resources in an equitable manner involving the provisions for nationalisation of sovereign resources, regulation and supervision of multinational corporations, commodity agreements, cancellation of debts of the poor countries, allocation of a share of the markets for the products of the developing countries, linking SDRs to development finance and international monetary reform: and (b) a plan of action under which (i) the Secretary General is asked to launch an emergency operation to provide timely relief to COMSA during the next 12 months and obtain from industrial countries and other potential contributors (which is the new name for OPEC countries) the announcement of their pledges by June 15, (ii) a Special Fund under U.N. auspices through voluntary contribution from these countries to provide emergency relief and development assistance from January 1975 and (iii) the evolving of a just and equitable relationship between prices of raw materials, primary commodities, semi-manufactured and manufactured goods exported by developing countries and the raw materials, primary commodities, food and capital equipment imported by them and a link between prices of developing countries' exports and the developed countries' imports. Though these decisions were adopted late or the last day in silence, after their adoption led by the US, all industrialised countries of the West expressed their reservations and opposition to the declaration. The time that could have been spent reaching limited agreement in the Fund was spent on principles which will have some moral force but which will not be followed by the developed countries.

World Population: During the current International Population year, the UN demographic year book reports that the World's population reached 3,782 million, in mid 1972. This is a 2 per cent annual growth, which if unchanged, will double World population in 33 years—in 2007. One out of every two persons in the World is an Asian, 2,154 million living in Asia, representing 56.8 per cent of the World total. Among the ten most populous countries, China with (800,721,000) and India with (563,494) are at the top followed by USSR, US, Indonesia anu Japan. The year book also calls attention to the growing urbanisation in the countries surveyed. It lists the 10 largest cities starting with Shanghai (10.8 millions) and Tokyo (8.8 millions) and ending with Bombay (5.9 millions), Seoul (5.5 millions) and Sao Paulo (5.1 millions).

World Aid: The March meeting in Washington of the Development Assistance Committee of OECD made an important (negative) decision not to reduce the aid programmes because of the effect of the rise in the price of oil on the developing countries. Not much progress was made in the untying of aid. The first step which the Committee has been considering is a limited untying, allowing the recipients to use such aid for buying in less developed countries. With the pressure on their balance of payments, probably this is not the most appropriate time to consider this question. Countries like Japan facing a deficit trade balance are not enthusiastic about the concept of untying. The Washington meeting agreed on a review by the developed countries of their aid programmes to see if (a) aid should not be diverted from oil producing countries like Nigeria and Indonesia to those like India and Bangladesh who have been hard hit (b) procedures could be established for speeding aid delivery, particularly where it is needed for purchase of foodgrains and other essentials.

World foodgrains: World production of both rice and wheat has increased this year. In rice, the production is 310 million tonnes, which is 18.5 million tonnes more than last year. Use of HYV, good rains and increased acreage accounted for this production increase—China produced 103 million tonnes (against 99 million tonnes last year), India 66 (against 63), Indonesia 25.3 (against 24.25), Japan 15.5 (against 14.98) Thailand 13.34 (against 12) million tonnes. Bangladesh increased its production to 18.7 million tonnes, a 30 per cent increase over last year. Despite flood damage Pakistan produced 3.8 million tonnes. Wheat also increased in production. US crop estimates are 56 4 million tonnes being 9.8 million tonnes more than 1973, Canada's at 20 million tonnes compared to last year's 17 1 million tonnes, Soviet Union's winter wheat estimate is 53 million tonnes compared to last year's 49.2 million tonnes. The problem for both foodgrains is that the buffer stocks are low. FAO computes that wheat stocks stand at 29 million tonnes which is 4 weeks of the World's annual consumption. The other uncertainty is the extent to which foodgrain production the World over depends on weather and good rains. Drought is causing havoc and starvation deaths in Sahalien Africa. Finally the power shortage and scarcity and high prices of fertilisers and pesticides are an obstacle to increased production. These are some of the issues to be considered at the UN Food Conference to be held in November in Rome. (See Vol. IV pages 29 & 135).

ECAFE: The 30th annual session of ECAFE at Colombo in April has recommended the setting up of a World Fertiliser Fund to aid developing countries to obtain fertilisers at reasonable prices and expand fertiliser production. It also adopted a resolution which influenced the UN special session to set up an international fund to help developing countries to meet their urgent balance of payments needs and long term development requirements through providing resources on soft concessional terms. India joined Iran and Sri Lanka in becoming the third member of the Asian Clearing Union. The Commission also decided on the early establishment of an Asian Centre for training and research in social welfare and development. This last decision will be followed with interest by social and welfare specialists tn Asia.

ADB: The Asian Development Bank board of governors meeting in April in Kuala Lumpur concentrated on devising a programme and strategy to help Asian countries meet the oil crisis, through manufacturing fertiliser from natural gas and power from coal. The Bank has signed a $17 million loan with 7.5 annual interest with Kuwait and borrowed 7,500 million yen from Japan. India was Chairman of the meeting and laid stress on helping the member countries meet the balance of payments deficits emanating from the World unstable monetary forces and the oil crisis. India is not a borrower from ADB but is deeply involved in its developing a strategy of development suited to this continent. The Board decided to launch a $525 million Asian Development Fund from June 1974 to aid the development of its member countries.

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II Agricultural Development

Paddy and other Foodgrains :

As noted in the last issue (Vol. IV page 285), against the annual demand for 69 lakh tonnes of foodgrains in the State, the rice output this yaar is estimated at 53 lakh tonnes, but the coarse grains output—cumbu, keveru, cholam and varagu—is likely to be 16 lakh tonnes rather than the 18.20 lakh tonnes forecast in the last issue. There has been a reduction in rice and coarse grains production to the extent of around 50 per cent in 4 districts which have had insufficient rainfall—North Arcot, Chinglepu<, Salem and Ramanathapuram districts. In the Kanyakumari district also there has been a poor harvest due to the rains during the flowering period of the crop which interfered with their pollination and water shortage in the tail end farms. Out of 70,000 acres in the second crop, 7,000 acres failed completely. For these drought prone areas, the SFDAs should engage in construction of wells to use the underground water which is periodically available. In all other districts the crops have been normal. In Thanjavur there has been a good harvest. In Tirunelveli, the February/March rains filled the tanks and with the HYV spread over 90 per cent of the farm areas in the district, the harvest has been very good. In fact against the procurement price of Rs. 70 per quintal, the farmers in the district have been able to sell their produce only for Rs. 64-69 per quintal. The government's aim is to procure 2.4 lakh tonnes of rice against the union government's desire that it procure 3.5 lakh tonnes. The State government is continuing the double system of food supply to the people. For the major part, the private trade channels function. Here the government's view is that until rice production reaches a much larger annual total of 80-90 lakh tonnes, only then can the government outlets meet the entire demand for foodgrains and only then can the takeover of the wholesale trade be possible and effective. At present the main distribution is done by private traders. A part of the distribution is carried out by the State through the State Civil Supplies Corporation, the co-operatives and fair price retail shope. The foodgrains for this State distribution is through the levy on the traders and not on the farmers. The godown and storage capacity in the State is on the increase and transport losses not large. The FCI has a storage capacity of 4 lakh tonnes and new godowns to store 15,000 tonnes are being built at Coimbatore, Karaikal and Arkonam. The State Civil Supplies Corporation has a storage capacity of 63,000 tonnes and is building godowns for storing 27,000 more tonnes. Till March therefore the good foodgrains situation kept prices down. In other States the foodgrains price index rose by 55 per cent in one year, while in this State the rise was only 27 per cent. However with the poor harvest in 4 districts and the Union government's decision to remove all restrictions on the movement of coarse grains referred to earlier, foodgrains prices began to rise in this State. The government failed in its representations to the Union authorities to reimpose the inter-State restrictions. Hence towards the end of April, the government took the following action to keep the price of rice down. First all restrictions on the movement of paddy and rice in the State except in Thanjavur and Kanyakumari and the taluks bordering on Kerala, Karnataka and Andhra, were lifted. Second the procurement levy was reduced from 25 to 15 cent in all districts except in Thanjavur, where it is continued at 30 per cent. Third to promote the speedy

hulling of procured paddy all modern mills of the State Civil Supplies Corporation (SCSC) and FCI are exempted from the power cut. The exemption applies also to hulling agents of the SCSC, and for private millers who hull at approved rates the power cut is reduced from 30 to 15 per cent. Fourth as an incentive to prevent hoarding and smuggling, those who give information on such activities are awarded 25 per cent of the stocks confiscated instead of the originally established 10 per cent. With regard to wheat, the State's position is difficult. It requires 20,000 tonnes per month and was till last year receiving 30,000 tonnes. But from January the Union government allotment has been 9,000 tonnes per month. Hence wheat is issued to wheat eating persons only through cards. Wheat products are scarce and are not available in the open market. One of the hard hit units as a consequence is the 35,000 tonnes per month capacity of wheat flour rolling industry in the State. These mills have been working to 16,000 tonnes a month supplied by the government. From the end of April, the government is making available 10-12 per cent of their requirement and permitting them to purchase 30 per cent of their requirement from the open market. Working thus at 42 per cent of their capacity, with the government wheat supplied at Rs. 125 per quintal and the open market wheat purchased at Rs. 225 per quintal, they are still able to break even because of the very high prices of wheat products in the open market. It is hoped that a more adequate allotment to the State after the rabi harvest will bring down wheat prices.

Fertiliser distribution:

Further to the kharif fertiliser needs referred to in the last issue (Vol. IV page 286), the total chemical fertiliser requirement for 1974–75 is estimated at 3.25 lakh tonnes, of which the kharif needs are 1.1 to 1.3 lakh tonnes. 60 per cent of this requirement is to come from non-pool stocks which will be provided by the different factories and the rest from the pool fertilisers. To tighten supervision of their distribution and diminish malpractices, one district agricultural officer for each revenue district and one deputy agricultural office for every revenue division are being entrusted with the supervision at every level of distribution from the wholesaler to the farmer. At bottom is the problem of short supply and all supplements are now needed to be mobilised, such as enriching organic materials with nitrogen, fortifying bagasse by 10 per cent of nitrogen etc. Here the alternative and competing use of bagasse for fuel, power generation and manure needs has to be computed in deciding on its most effective use.

Research Results:

March and April witnessed a number of important breakthrough in foodcrop production in the State. 2 new varieties of paddy, one each of ragi, tenai, and cotton were released for commercial production. The Regional Research Station, Aduthurai released a new variety, ADT-30, a dwarf type paddy with a duration of 80 to 90 days with long bold good quality grain. It is non-lodging, blast resistant and when grown in the Kuruvai or Navarai season yields 5,261 kg. per hectare. A second paddy variety also released by the Aduthurai Centre, AD-31, is a semi-dwarf type, also non lodging and blast resistant and matures in 100-104 days. It is being used in Thanjavur and yields 6,198 kg. per acre. The Regional Research Station in Koilpatti released also a third new Tenai variety, K-1, which is drought resistant and a heavy yielder at 1,099 kg. per hectare. This is 40 per cent more than the existing Tenai variety, CO-3. A fourth strain also released by Koilpatti centre is the PR-202 ragi, with a duration of 105-110 days and is blast and blight resistant. It

can be grown in both irrigated and dry land areas and its yield which is 4,070 kg. per hectare is 1/3 more than the current variety, Saradha. The fifth release is from the Cotton Research Station at Sri Villiputhur, a new elite cotton variety MCU-8. Its duration is 161 days, resists the stem weevil and is drought resistant. It can be grown in irrigated or dry conditions and is superior in all ways to the very superior MCU-4. It yields 2,195 kapas per hectare, with a staple length of 1-5/32 inches and a spinning capacity of 80s. Another development is the relief afforded to the laborious transplanting of the paddy seedling. In fact in the semi-dry paddy cultivation in the northern districts of the State, the seed is sown behind the plough when the field is moist dry which is later converted into a wet crop from the wells or tanks. Now a manually operated transplantor called Annapoorna designed in Orissa is available. It can be operated by one person from a replaceable tray holding 40 sq. metres of seedlings picked by 10 finger pairs and planted in the soil. The use of this simple machine ensures uniform spacing and depth, levelling and compacting of the soil and cuts down the labour involved by 80-90 per cent. In an economy of under-employment, the use of this gadget must be measured against the increase in productivity that would result, before its widepsread use is proposed.

Dairy farming :

The second dairy at Ambattur (See Vol. III page 642) will be commissioned at the end of 1974 at a cost of Rs. 275 lakhs. To enable the co-operative unions in Madras, Vellore, Erode and Ooty to procure 3.5 lakh litres a day by the end of the Fifth Plan, new co-operative unions and the restructuring of existing ones are planned. The milk powder plant with ten metric tonnes capacity at Madurai (See Vol. III page 420) will go into operation in 1975. Also at a cost of Rs. 30 lakhs milk processing plants to handle 10,000 to 20,000 litres a day are being set up at Salem and Tirunelveli. At the end of March, the Coimbatore industrial co-operative for the manufacture of dairy equipment was inaugurated. The Kurichi factory will start with manufacturing 12,000 milk cans per annum needed by the milk supply societies in the South, which are now being obtained from the North. At a later stage it will manufacture other equipment and spares for the dairy industry, including mechanical milking equipment. The Society with an authorised capital of Rs. 2.5 lakhs has been formed by 95 milk supply co-operative societies and 13 technically qualified persons, who have been advanced loans of Rs. 38,000, under the State aid for employment of technically qualified persons. The Society will rely on RBI refinance facilities for its Rs. 28 lakhs working capital needs and on IOB for commercial credit. An important development in sheep farming is the setting up of the Srinagar factory for large scale production of atomic vaccine for sheep which will immunise them against lung worm disease and improve the longevity and productivity of the 42 million sheep population of the Country.

Fish farming :

On April 14 the State Fisheries Development Corporation was set up to exploit deep sea fish resources, avoiding over exploitation of the offshore potential which is utilised by traditional crafts. The deep sea fishing will be by factory type ships and will use the wadge bank areas of Cape Comorin. The government is developing fishery-based industrial estates at Ennore, Cuddalore, Mandapam and Tuticorin in which private entrepreneurs, to whom 20 per cent interest free loans, are given are involved. Upto the end of March, Rs. 2.27 lakhs have been approved for such enterprises. The

Fisheries programme for the Fifth Plan involves an outlay of Rs. 18 crores (compared to Rs. 10 crores in the Fourth Plan), calling for increasing fish production from 4.4 lakh tonnes to 6.3 lakh tonnes, mechanisation, establishment of processing and freezing complexes. The government is investing Rs. 88 lakhs in the establishment of large complexes of ice plants, and cold and frozen stores at major fishing harbours in the State. The experiment in pearl culture at Veppalodai (See Vol. IV page 188) has developed successfully. More than 80 per cent of the oysters yielded pearls. On this basis the Union government has been approached for the approval of a pilot project for the commercial exploitation of pearls in the State.

Tea :

March estimates place the 1973 tea production at 467.38 kg. as forcast in the last issue (Vol. IV page 288), with the South India crop half a million kg. (and not 0.3 million kg. as forecast in the last year) over 1972. For the period April-October exports amounted to 100 million kg., compared to 121 million kgs. for the period in 1972, exports for 1973-74 might total 208 million kgs. earnings Rs 1,529 crores in foreign exchange. Though the unit value realised was high at 7 89, the earnings have dipped from Rs.90 crores last year to Rs.79 crores this year. In order to increase production particularly in zones III-V (West Bengal and Assam) and boost exports, the government has under consideration a proposal to grant a higher quantum of export rebate to these zones. The Tea Board has recommended that the upper limit of the rebate be raised above the current 75 paise per kg introduced in 1970. A strong case has been made by the Assam tea gardens for a higher rebate and for mitigating the impact of the differential tea excise under which they suffer. The plight of the Jorhaut Tea Company, once the producers of Assam's best tea highly prized by overseas consumers which under the differential excise is rapidly disintegrating is held up as an example of the problem. Three measures are under consideration. First a floor price for tea exports to be fixed in consultation with Sri Lanka is under negotiation. Second the proposal for the grant of an incentive of 7.5 per cent calculated on the value of exports has not been approved but might be revived. Third the extension for a further year of the exemption from excise duty in excess of 70 paise per kg. for the weaker tea gardens who have not secured more than Rs. 5 per kg. in three financial years might be allowed. On the export front, tea is the only commodity which has not shared in the general price rise in the world markets. India as the largest producer of tea in the world has a particular responsibility to take the necessary measures along with Sri Lanka to improve the terms of trade for its tea exports. South Indian tea face a problem due to the lack of funds to the credit of trade in tea with Sudan, which is the second largest importer of South Indian teas (See Vol. III page 575). A fresh agreement between the two countries is awaited to relieve this problem. In the meanwhile revision of the auction rules under which South Indian tea is sold is being demanded. 79 per cent of the tea is being sold in public auctions in Cochin, Coonoor and London as against 20 per cent through private agencies and forward contracts. This is being examined by a study team of economists whose report is awaited. The 8 co-operative factories in the Nilgiris produced only 3 million kg. of tea, representing 10 per cent of the tea produced in the Nilgiris. 6 more co-operatives to help small planters are being set up. The Tea Board's investment in the 14 factories is Rs. 1 crore. There is need to extend this network of service factories to cover all the small growers.

Coffee:

As noted in the last issue (Vol. IV page 289), the 1973-74 coffee crop is estimated at 90,000 tonnes but the consumption will be 99,000 tonnes, consisting of 60,000 tonnes for exports and 39,000 tonnes for internal consumption. The surplus comes from the all time bumper coffee crop of 1,09,834 tonnes produced in 1970-71 (See Vol. I No. 8 page 10). In fact the carry-over from that year, gave rise to the export problems when export prices were below internal prices, there were large international supplies and India's export quota established by ICO was at a low level. All that is now changed. The Brazilian coffee crop having failed, there is world shortage of coffee, prices are ruling very high and ICO has no control over export quotas. Given the impact of oil prices, there is pressure to increase exports, even at the cost of internal consumption. Coffee exports have increased steadily from 20,416 tonnes earning Rs. 7.61 crores in 1962-63 to 60,000 tonnes in 1973-74 earning Rs. 42 crores. For this year 1974-75 there is pressure to increase exports to well above 60,000 tonnes and earn Rs. 55 crores. But crop prospects for this year and next year are not bright. There is a 3 year cycle in coffee production, after 1970-71, 1973-74 was a good year at 90,000 tonnes production but the next 2 years are in the depressed part of the cycle. On top of this there are the shortages of inputs—fertilisers, pesticides and power with their effect on the yield per hectare. In 1970-71 it was 808 kg. per hectare which fell to 486 kgs. and 495 kgs. per hectare in the 2 subsequent years. Coffee plantations should be given priority in distribution of their needed inputs —particularly fertilisers—so that the yield can be maintained in the Southern plantations at 500 kgs. per hectare. The possibility of rationing domestic consumption in order to increase coffee exports is also not out of the question.

Rubber:

Unlike in the case of coffee in which the Country produces only one per cent of the world output, in rubber India is the fifth producer in the world though having only 3 per cent of the world acreage. Rubber production and productivity have been increasing fast in the Country. The production index moved to 377 in 1971-72 compared to the general index for all commodities which was 129, with even the Green Revolution wheat at 238. The productivity index per hectare was 201 while for other commodities it was only 117. In this development the small planter is the key. Until recently internal prices were below the notified price of Rs. 520 per quintal. But now international prices, which in Singapore are Rs. 900 and at other places at Rs. 1,300, are having their impact on Indian prices. There is a push to export rubber, the Rubber Board having increased its export target from 10,000 to 20,000 tonnes. By the end of March the export has been only 2,000 tonnes and will not exceed 5,000 tonnes due to lack of shipping space. Now the internal demand for rubber is very high and tyre and tube manufacturers who have been working below capacity, with a slackened demand for rubber due to their poor labour relations, frequent shutdowns and the effect of the power cuts are now awake and are demanding all the rubber available. Rather than export raw rubber, they propose increased exports of tyres and tubes and rubber goods which will fetch higher values from abroad. To encourage increased rubber production, the current rate of subsidy of Rs. 2,741 per hectare for replantation of old rubber plantations is to be doubled for large and medium planters and trebled for small planters. Around 70,000 hectares need

to be immediately replanted, 80 per cent of which is in the small planters sector. Against a 17 year target of 62,000 hectares of replanting, only 35,000 (55 per cent) hectares have been replanted. The cost of replanting which was Rs. 5,000 per hectare in 1960 is now Rs. 9,200 and the low subsidy rate and the loss of income during the 7 year waiting period after replantation have acted as a damper on increased production. Now with the increased subsidy and the good R & D work of the Rubber Board (which have an unspent balance of over Rs. 11 crores from the 30 paise per kg. R & D cess), production and replantation should increase and improve.

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III Industrial Development

Salem Steel:

Since work started 30 months ago on the Salem steel plant site, the major part of the site levelling by HSWCC has been completed, the work on the Sooramangalam-Taramangalam road underway and the water supply schemes readied. This part of the work has cost Rs. 5 crores. After some time-consuming bureaucratic delay, work on the 8 kilometre railway line from Salem and the railway siding costing Rs. 1.25 crores by the Railway Board has started. Now what is needed this year is to increase the plan allocation from Rs. 3 crores which has been alloted to Rs. 10 crores that is needed, if not the Rs. 15 crores which has been requested (See last issue Vol. IV page 290). The Ministry of Steel and Mines has made strong representations to both the Union Planning Commission and the Ministry of Finance and it looks as if Finance will not be the obstacle for the project's progress which it was reiterated in the April meeting of Lok Sabha in March will go on stream in 1978-79. Meanwhile the general steel shortage in the country has particularly hit this State. Both the bulk consumers of steel as well as the producers have begun moving steel by road, adding to the cost at Rs. 340 a tonne. The breakdown in the railways is such that steel consumers have resorted to this quite costly road transport to keep their foundries going. In addition HSL and TISCO stockyards in Madras ran out of steel and also brought down their material by road at enormous cost using scarce diesel. Even as work is going ahead on Salem, Vishakapatinam, Vijayanagar, the railway transport of steel should be rationalised and assured to this and other Southern States.

Neyveli:

Neyveli has long been regarded as the sick man among public sector enterprises. It is running at an annual loss of Rs. 12 crores that is the loss for 1973-74—and its cumulative loss todate amounts Rs. 68.5 crores. In this simple statistical presentation that has been made in this Bulletin's past issues (example Vol. IV page 142), it has also been pointed out that the major reason for the losses is that the periodical

replacement of machinery was not provided for and the mine which should have been producing annually 6.5 million tonnes per annum was now producing only 3.5 million tonnes and so generating 300-350 MW and under-utilising its fertiliser and briquetting plant instead of generating 600MW of power and fully using the other 2 plants. This is the fundamental cause for its unviable status—And before the oil and coal crises, the past issues of the Bulletin have referred to the long, learned and delaying studies made by the Union Planning Commission as to whether Neyveli would ever be viable. One curious result of these studies was, when faced with the power famine last year, the decision to use fuel oil for 2 generators (See Vol. III page 160) at Neyveli which has cost the State government Rs. 1.25 crores in capital cost, and increased the generation cost by 250 per cent (from 9 paise to 22 paise). This decision was supported by all at that time and though today in face of the oil crisis, it looks a little like Marie Antoinette's action in asking the hungry masses who wanted bread but could not get it, to eat cake—even at that time it had a curious ring—that to bring more of the abundant lignite from underground would cost more than bringing oil from the gulf countries. Now however with the fact that oil costs 4 times as much as coal and eight times as much as lignite, and the landed cost of coal in this State—if it ever lands, given the railways bottlenecks and shipping non-availability - being twice the pithead costs, all the pre oil/coal crises feasibility reports on Neyveli of the Union Planning Commission need to be scrapped and a fresh start should be made. First its Rs. 68.5 cumulative losses should be turned into equity capital and the ministry of steel and mines statement on April 11 in the Lok Sabha that capital structure of Neyveli is being reorganised is just that. If this loss is treated as equity capital, it is one way of acknowledging the capital starved nature of the undertaking and the enterprise can pay easily in the future the interest on it. Second the delays in making Neyveli viable should end. After long delays Rs. 11.42 crores are being spent on equipment to raise the production of lignite to 4.5 million tonnes by 1976-77, and after even more delays (not yet ended as far as the Rs. 19 crores foreign exchange component is concerned) the further Rs. 36 crores has been sanctioned to raise the production to 6.5 million tonnes per annum by 1979-80. Third with the future prices of oil and the fact that coal is not available in this State and is not likely to be made avilable by our railways, the second mine cut becomes very practical and very feasible. 100 MW thermal station requires 1,800 tonnes of coal a day which is 2 train loads. Our power deficit is 7, 000 million units by 1978-79 and 4,000 MW by 1983-84 and no railways can transport the coal needed to meet this deficit. Moreover there is no need for it as we have all the lignite we need. And so not only is the second mine cut at a cost of Rs. 310 crores viable, it should pass from the stage of being approved in principle to being executed now. The PIB should act. Further we should now plan for a third, fourth and fifth mine cut at Neyveli. That is the 40 year perspective plan that is being drafted and its financing could be undertaken by the World Bank and OPEC countries. It is planning—long range and effective planning—that we lack and not resources to meet our power needs.

Bhel:

Bhel at Tiruchy along with its other units at Hardwar and Hyderabad and the Bhopal unit of HEIL as noted earlier in the current issue has had another profitable year with a 62 per cent increase in output at Rs. 220 crores (compared to Rs. 141 crores in 1972-73). Its profit of Rs. 27

crores has wiped out the cumulative losses of Rs. 7.3 crores of the former HEIL. Its exports are expanding to Ghana, Iraq, Kenya, Kuwait, Malawi, Poland, Singapore, Sri Lanka, West Germany, UAR, Uganda and Malaysia. For this year, it plans to further increase its 100 per cent expansion of the physical equipment of last year at 2,100 MW. For 1974-75 the production target is 2,950 MW.

ICF and Golden Rock :

The Integral Coach Factory has more than doubled its output in 10 years. In 1962 it produced 350 coaches and last year 750 coaches. It met the Country's passenger coach requirements and also exported coaches to Taiwan, Zambia, Burma and Thailand. The railway workshop at Golden Rock, Tiruchy is also doing well. To meet the Country's increased demand for wagons, it has embarked on a Rs. 25 lakh project under which its production of 800 wagons last year will increase to 1,500 this year, 1,800 in 1975-76 and 2,250 in 1976-77. It has also designed a new broad gauge covered general purpose wagon called CRT which can carry an additional 8 tonnes. It has orders for 3,000 CRT wagons. It is also increasing its capacity for periodical over-hauling of diesel electric locos from 30 to 42 as well as designing and producing sophisticated electric and electronic equipment for diesel locos. It is also producing ticket printing machines at 1/3 the cost of imported machines and plans to establish a Rs. 70 lakh cylinder liner reclamation plant. It is one of the expanding employment generating projects in the State.

State agencies :

The annual report of the government on State financial agencies shows progress in every agency.

SIPCOT :

SIPCOT which is the youngest (2 year old) of the agencies has developed rapidly. It has sanctioned Rs. 6.46 crores aid, with a total investment of Rs. 55.37 crores employing 9,450 persons. Out of its 29 feasibility studies, 16 projects are now being implemented. In the 2 years, 138 units had availed themselves of the 15 per cent Union government subsidy for industrial develpment of backward areas to the tune of Rs. 15 lakhs. Its successful Ranipet complex which has now Rs. 18. 57 crores investment will develop into a Rs. 60-70 crores project (See Vol. III pages 351 and 379 and Vol. IV page 39). Its second similar project is in the 1,000 acre backward Hosur taluk of of Dharmapuri district. It is a·tracting entrepreneurs from outside the State. A Calcutta entrepreneur with the help of Rs. 32 lakhs is setting up a glass manufacturing plant. Plants for manufacturing hosiery needles, capacitors, high tensile bolts and nuts, mild steel and alloy balls, watches, GI castings, cranes and control gears, fans, automatic looms and biscuit factory are being planned. TIDCO is also planning a few joint enterprises in the complex. SIPCOT has again requested government permission to float Rs. 2 crores of debentures and plans within the next 8 years to develop a major industrial complex within each of the other 7 backward districts of the State. It is promoting the establishment of industries in the satellite towns of the Madras Metropolitan Development Authority, starting with Maraimalai Nagar.

TANSI :

TANSIS's progress report is also encouraging. It is setting up its moped project in a backward district. Its prototypes are under examination by the vehicles R & D unit at Ahmednagar.

TIDCO :

TIDCO's joint projects cover refractories, calcined petroleum coke, dyes and naphtha ASG, calcium carbide, marine diesel engines and iron castings. At a cost of Rs. 70 lakhs, to which it is contributing Rs. 6.5 lakhs, it is setting up a project for the manufacture of jute twine. TIDCO is setting up a joint project with Simpson for a grey iron castings plant near Madras. The castings are for automobiles and tractors. The plant will have a capacity of 20,000 tonnes per annum, with a capital cost of Rs. 8 crores, TIDCO contributing Rs 8 crores. Another joint project with KCP for the manufacture of finished heavy castings will help diversify CONCAST's production at Arkonam. The melting facilities available in the electric arc furnace of CONCAST will be used to produce 1,000 tonnes of finished heavy castings. This Rs. 1 crore project will lead to the development of a heavy machine building complex at Arkonam.

SIDCO and TIIC :

SIDCO is setting up a consultancy cell to help small industries to organise themselves on sound lines with the help of experts, and financial materials and marketing management. It is helping to develop ancillary units for medium and large scale enterprises. One of the bottlenecks that small industries in the State face is with regard to credit. During 1969 and 1970 bank credit to the small sector increased by 47 per cent but in 1972 it declined to 8 per cent. For the 3.25 lakhs registered small units in the Country including the 40,000 in this State, the creation of 2 million new jobs in the Fifth Plan calls for a credit of Rs. 1,300 crores, of which at least Rs. 1,000 crores must come from the scheduled banks. Foreign exchange is another imperative. The recent IDA provision of foreign exchange to the Tamil Nadu Industrial Investment Corporation (TIIC) will enable the Corporation to meet the foreign exchange needs of small units. By the end of March, operating for a month TIIC had allocated Rs. 1 crore of foreign exchange to 12 small units. In April a TIIC-SIDCO consortium project has been launched for joint financing of small scale industries at a reduced margin of 10 per cent and at concessional rates of interest. One of the problems faced by small units is the short supply of sodium nitrate. Many small units at Sivakasi are facing closure for lack of potassium nitrate. The Union government should release adequate supplies to help the State's small units.

Power Centre unit :

The Power Centre Private Limited inaugurated in April in Madras as a small scale unit for the manufacture of diesel generating sets, miniature safety switches and marine diesel engines has already in the two years since it was launched by an engineer entrepreneur made its mark. Incorporated in 1972, it turned to meet the problems set by the power famine in the State and Country, and provided testing facilities for any generating set from 1 KVA to 500 KVA and to manufacturing, erecting and commissioning generating sets for small industries. In its first year it manufactured diesel generating sets to a total of 6,500 KVA for 99 units, and in the second year supplied sets of 8 500 KVA to 200 customers. It has established an R & D division for developing new items and for diversifying its products. It is also generating 45 HP marine diesel engines to meet the fishing boats needs of the State.

Madras Fertilisers :

Madras fertilisers in April completed production of 1 million tonnes of ferti-

lisers (3,72,000 tonnes of urea and 6,28,000 tonnes NPK). A third train of NPK is now under construction which will increase its NPK capacity by 50 per cent. This expansion is needed to meet at least in part the fertiliser shortage in the State.

Ceramics:

A modern functional industrial estate for ceramics has been established at Virudhachalam with an adequate supply of raw materials, firing facilities, with a testing and research laboratory available to the units. The major raw materials, China clay, quartz, felspar, ball clay and gypsum are available there along with the needed skilled labour. The refractory industry as it develops there will be meeting the refractories requirements of Salem Steel and Arkonam Concast.

Cement:

The Cement industry in the State is in the process of complete breakdown. Last year, it was affected by the power cut (See Vol. III pages 350-351), this year the units will have all the power needed but no coal. The seven cement factories in the State, which is the largest producer of cement in the Country, need 84,900 tonnes of coal a month but upto February they were receiving not even half at 40,000 tonnes and now even that has dried up. The result is that production is cut down and a large body of workers have been laid off. In March/April the India Cement plants at Talayuthu and Sankari closed down 5 out of their 8 kilns. Chettinad cements at Karur produced 10,000 tonnes against a capacity of 15,000 tonnes and with 3 days coal arriving on April 18, closed down one of its 2 units. ACC at Maddukarai has only 2 out of 5 kilns working. Madras Cements has one of two working at Thalukapatti. Tamil Nadu Cements has coal only for one of its two kilns. Dalmia cements has closed down 2 kilns, laid off 1,400 workers and is producing 10,000 tonnes against a monthly production of 45,000 tonnes. The industry has tried to arrange coal arrivals from Calcutta and has had to give up the attempt because it found that there was either no coal or no wagons. Between the railways and the collieries, the cement industry is in dire straits. It is hoped that the promise to the State of 100 wagon loads of coal per day from the Raniganj coal fields by the Union government will be kept as otherwise the State and the Country will suffer a serious and unnecessary shortage in cement.

SPIC:

On April 14, SPIC completed the construction of its urea plant with which a production capacity of 1,600 tonnes a day is the largest in the world. The management and labour have distinguished themselves in completing the plant 4 months ahead of schedule in 23 months. Commercial production of urea will be starting in early August. This mammoth plant now awaits completion of the adjascent 11OOT/day ammonia plant. The utilities, the electrical sub-station and the steam generating plants have been completed. The project is a testimony to sound planning and efficient management.

Handlooms and yarn:

Superfine yarn worth more than Rs. 2.5 crores had accumulated with the mills in the State by mid March, while handloom weavers producing 100s sarees were unemployed in February and March due to the non-availability of yarn. This muddle was created by the Union government removing price control on yarns of 81s and above (See Vol. III page 803) while the distribution control was retained. It means that the mills producing 81s and

above have to sell to the State Directorates of Handloom on the basis of the allotment made by the Textile Commissioner. If there had been no textile strike in February (See last issue Vol. IV pages 261-262) the accumulations would have been Rs. 4 crores in the State mills. The mills offer their yarn to the States and wait for 2 weeks and if there are no replies, offer it to CCI which must reply within 1 week. The mills have been waiting for 2 months without any orders from any one. In the meanwhile on the basis of rumoured export orders. prices of even coarse cotton yarn has shot up by 10-12 per cent. Handloom exports in 1973 have been stagnant at Rs. 48.27 crores compared to Rs. 43.96 crores in 1972-73. Even the January 1974 figures are similar, Rs. 4.46 crores against Rs. 4.38 crores in January 1973 This poor performance is due to the cotton yarn muddle, the power cut, and higher freight costs. It is against this messy situation that the State government has taken the bit between its teeth and introduced a bill in the March/April session of the State legislature under which the State government will be empowered to control the production, distribution and sale of yarn and to reserve certain varieties of cloth exclusively for the handlooms. This will help the mills and safeguard the interest of the 20 lakh handloom weavers in the State vis-a-vis power looms and composite prices. There is already a rather ineffective Union government Act in this area and there is some doubt whether the State can legislate in an area where there is Union legislation. The bill has been referred to a joint Select Committee of the legislature. There is indirect support to some of the concerns expressed in this State by the all India Cotton Growers Association which has recommended that the Textile Commissioner's post be abolished and a National Textile Commission be set up to avoid this muddle. Again the All India Handloom Organisation has recommended that the handloom capacity of 4,000 million metres a year be attained through regular and full supply of yarn and finances. It has recommended also that working capital assistance be increased from Rs. 500 to Rs. 1,000, as the prices of cotton, yarn and dyes and chemicals for cotton handloom weavers have doubled and similarly for silk handlooms be raised from Rs. 1,000 to Rs. 2,000. Concessionl finance from the RBI to this decentralized sector is needed for its survival and development in the Fifth Plan. For the all India Handloom fortnight, April 28-May 11, as for last year, a 10 per cent rebate on handloom sales was granted. The State co-optex has a good year last year emerging out of the red, and is launching a large export drive to modernise and expand its show room in the principal cities of the Country.

Handicrafts:

An extension of the All India Handicrafts boards is functioning successfully for the South in Nagercoil. The Centre identifies crafts and craftsman and help with their materials, tools, designs, market and credit. It undertakes village surveys, and assesses the quality and marketability of the handicrafts, organises market meets and brings craftsmen and exporters into direct contact with each other. At the Madras meet in March, over 50 craftsmen from all over the State met and concluded agreements with dealers. The Tamil Nadu Handicrafts Development Corporation on that occasion also orgnised a Talent Exploration meet which gave an opportunity to talented young men and women to be identified and known. There is still a long way to go in increasing to the full handicrafts in the State in light of the non availability of such materials as palm leaf products, rosewood, indigenous ivory etc. The annual

production is now Rs. 400 crores and exports Rs. 136 crores. Both these are to be doubled in the Fifth Plan.

Leather :

At the first meeting of the Leather Goods Development Council in early March, the policy of providing technical, financial and managerial assistance to small tanners was decided to enable them to convert more semi-processed leather into finished leather for export purposes so that the Seetharamiah Committee recommendation (See Vol. III pages 189 and 261), to convert 75 per cent of semi-processed leather into finished leather exports could, to the extent of 50 per cent of that target, be attained in the Fifth Plan. The small units will continue to be nourished and helped under this policy so that the decentralised leather tanning sector can grow into a viable self employment and employment generating sector. A ceiling on the export of semi-processed items through a quota system for the year has been announced. However practical action to promote the leather trade is still lagging. The duty draw back rebates have been reduced at a time when the cost of imported meterials and their import duties are rising The cost subsidy for exporters ranging from 15 to 25 per cent has not yet been activated. Also finished chemicals units as leather auxiliaries have yet to be developed to meet the overseas demand for finished leather in many colours. Till then felt liquors and dyes which are not indigenously produced need to be imported. The results of the first year's operation of the quota system show a certain slowness in fixing quotas (See Vol. III page 508) and a lagging promotion policy. The exports of finished leather in 1973 were only Rs. 10.4 crores. There is a large and growing market for finished leather and leather goods which has made the large houses enter this sector, but if the Country is to meet this demand and earn the foreign exchange, the government must move to a positive policy of developing the finished leather industry and relieve the air and shipping freight bottlenecks that it faees. One helpful decision in this direction is the government's announcement that there will be no cuts in the export quotas for 1974-75, which have been fixed at the level of last year. This is helpful because though the quota scheme was announced on April 1, 1973, in effect it operated only from August 1. So for 1974-75 there will be a full year's operation which works out to 690 million pieces of semi-finished hides and skins. As is the plan to build up the infrastructure to convert semi-finished leather, their extension of the export quota for a further year will give the government time to build the facilities. The policy itself of restricting the export of semi-finished leather is beginning to pay as reported by the Leather Export Promotion Council study team (See Vol. IV page 295). The Japanese industrial circles have successfully pressured their government to increase the Indian quota of finished leather because semi-finished leather is no longer available. Hong Kong wants to import from India finished leather products, provided its price is lowered a little. Australia also has a growing demand for Indian finished leather.

Private Sector Reports :

The annual report of the Lakshmi Machine Works, Coimbatore records a year of good plans for future expansion. Sales turnover in 1973 were Rs 15 lakhs higher but due to rising costs the net profits lower. The increased demand for the mill's combers, slivers, and machines led the company to apply for doubling the licensed capacity for these products. On the export front also good progress is recorded. In addition to a joint project in Malaysia, Rs. 80 lakhs of machines were

supplied and for 1973 Rs. 3.26 crores of machinery exported. The Company is establishing a second unit in the SIPCOT industrial estate at Hosur for the manufacture of various types of winders and a second plant to produce automatic looms. The Company's R & D unit—the Design and Development Department — has begun adapting the designs from the Swiss collaborators to Indian conditions and to developing a two in one twister machine. The 1974 plans include expansion programmes and continued collaboration with the Swiss firm. The annual report of Ashok Leyland for 1972-73 shows improved performance over that of the previous year, with the net profits at Rs. 108 lakhs, being 2.3 per cent of the turnover compared to 2.4 per cent and 2.5 per cent in the two anterior years. The indigenous content of the models were increased and orders with the ancillaries expanded. The Company received an industrial license to produce 10,000 Comets and the necessary building and equipment expansion are under way, together with a request to import Rs. 150 lakhs of machinery. Its export performance has been lower due to labour disputes. 10 per cent of the new Comets are to be exported to South East Asia and Africa. EID Parry's annual report covers the year ending 30th September 1973. After paying taxes and the earlier year's losses, the net profit was Rs. 111.47 lakhs, enabling the payment of a dividend of 10 per cent (after a break of 3 years when no dividend had been declared). Its Nellikuppam factory produced 38,290 tonnes of sugar at a recovery rate of 7.86 per cent plus 4,200 tonnes during the second season in September. In the last 2 years the company spent Rs. 8 lakhs on improved cultural practices, varietal cropping, better cane varieties etc. The production of arrack kept the production of spirit low. The production of superphosphates, acids and chemicals at Ranipet, Ennore and Tadepalli was affected by the power cut. The marketing of fertilisers including those from Coromandel and Madras Fertilisers was effectively carried out. Formulation of pesticides was limited but marketing of hybrid and HYV seeds and animal feeds expanded. The Ranipet sanitaryware production increased and the license to double the output is being acted upon. Engineering, consumer products and pharmaceuticals are being marketed satisfactorily. Exports of marine products, textiles, leather garments increased, further diversification of the Ennore factory has been applied for and developing production activities in the backward districts of the State is being planned. Action is underway to convert the Company into an Indian Company. The annual report of the Madras Rubber Factory for the year ending September 30, 1973 records an increase of sales of 20 per cent over the previous year and a dividend of 12 per cent. The Company plants in Madras and Goa have produced tyres for trucks and automobiles and have entered the export market. The Madras plant is being expanded from 6.1 lakhs to 10 lakhs and Goa by 8 lakhs so that the total capacity of the Company is 18 lakhs numbers plus 25 per cent permitted expansion. In this expansion the location of some of the company units in the backward areas of Goa, Arkonam and Kerala is reported. The Company has a small R & D unit which is engaged in designing indigenous machinery and equipment. Binny's Annual report for the year ending December 31, 1973 records satisfactory all round progress. In 1973 the turnover was Rs. 5.77 crores more than in 1972, and net operating profit Rs. 1.55 crores. During the year, on the basis of a management consultant's review, the organisation structure, job descriptions and evaluation, salary structures and policies were modified and modernised. Textiles production increased by 7.6 million metres, offtake by Rs. 5

crores and the export obligation of Rs. 329. 14 lakhs was fulfilled. The R & D unit was working on product diversification. The engineering division was expanded with a second ferrosilicon furnace and leather processing machinery as well as in the harbour works. The Tiruchy Steel Rolling Mills' annual report ending September 30, 1973 records a lower performance at 13,560 tonnes compared to the previous year's 16,850 tonnes, due mainly to the 75 per cent power cut. While its sales turnover fell only by 1.57 per cent, its gross profits declined sizably by 23.13 per cent and net profits by 24.56 per cent. The setting up of plant and machinery for the arc furnaces is completed and if the power situation is not further worsened, its current year's production should show a substantial increase. Tube Investments' report for the year ending December 31, 1973 shows a total turnover of Rs. 1,506.35 lakhs against the previous year's Rs. 1,460.72 lakhs, and a gross profit of Rs. 177.28 lakhs (against the previous year's Rs. 147 91 lakhs). Its net profit of Rs. 54.29 lakhs is an indicator of good performance for the year. The Coimbatore Cotton Mills' annual report for the year ending December 31, 1973 records an increased turnover by over Rs. 100 lakhs at Rs. 465.64 lakhs. An industrial license for 190 wider width automatic looms is expected. In the 3 years 1970–73 Rs. 36.65 lakhs have been invested in modernisation and renovation of machinery. With a gross profit of Rs. 74.85 lakhs and a net profit of Rs. 62 80 lakhs, it has been able to declare a very high dividend of 20 per cent to its shareholders. If the power situation does not deteriorate the firm will do better during the current year.

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IV. Education, Science and Health

Student Involvement in Social Change:

March and April which recorded student unrest in 12 States, however, introduced a new note in student involvement in social and political action and change. First the students organised themselves in Gujarat into the Nav Nirman Yuvak Samiti and spearheaded the agitation in the State which led (a) to the resignation of the Chief Minister and the entire cabinet, (b) to the resignation of over 100 members of the legislative Assembly and the dissolution of the legislature by the Union government, (c) to continuing agitation against hoarders, black marketeers and price rises and inflation, and (d) to the decision of all universities in the State to promote all students except those in the final degree classes without any examinations and the decision of the State Education Department to promote without any examination all school students from the first standard to the tenth. (Only in SSLC students will take exams and even here the marking is to be "liberal"). The lead to abolish examinations was given by the Gujarat University Syndicate in response to looting, arson and agitation by the students and

was followed by all other universities, South Gujarat, Saurashtra, Vallabh Vidyanagar and Baroda. Only one Vice-Chancellor—Saurashtra—resigned in protest at this lowering of academic standards and a number of employers are reported to have ruled out 1,974 graduates from applying for vacant posts. Second, students in Bihar organised themselves from early March to demand (a) a restructuring of the educational system (b) a curb on price rise (c) democratisation of university bodies and (d) an employment or unemployment allowance to the educated unemployed. The Chief Minister in early March announced a series of measures to meet this student agitation which included (a) setting up an expert Committee under the Minister of education to evolve an employment oriented educational pattern (b) opening departments of Ayurveda and Homoeopathy in the medical colleges (c) doubling of student scholarships (d) increasing the annual grant for builoing university students' hostels from Rs. 9 lakhs to Rs. 20 lakhs and (e) a special employment scheme to provide jobs to 8,000 educated unemployed by the end of March. But in view of the student union's decision to gherao the legislature at its opening in March, the government closed all colleges from March 14 to 18, to which the students reacted by seizing the Patna University, driving out the Vice-Chancellor and all staff and taking control of the University and all colleges. This was followed by an attack on the Minister of Education and other ministers, the proclamation of a Bihar Bandh on March 23, and unprecendented violence and arson on March 18 in which 2 newspaper offices were burnt down, several government and private buildings including 2 high grade hotels set on fire, shops and commercial establishments looted, railway lines uprooted, while the frenzied employees of the Assembly secretariat beat up the Ministers and assembly members. The student agitation continued through March and April on a peaceful note to change the government, reduce prices, root out corruption and restructure the education system. Third towards the end of March, four organisations, the Indian Youth Congress, the All India Youth Federation, the All India Students Federation and the National Union of students of India met in New Delhi and decided to launch a militant united-student movement against the price rice and spiralling unemployment in the Country. Their demands are (a) formation of an education and examination reforms committee (b) adequate student participation in all administrative and academic bodies of universities, (c) standard food at cheaper rates for students, (d) abolition of capitation fees and (e) use of MISA not against students but hoarders and black marketeers. Fourth the Rajasthan Unit of the All India Students Congress meeting in Jaipur at the end of March adopted a resolution calling for the closure of all educational institutions in the Country for one year to work out a "meaningful educational policy." It termed the current educational policy as "no good for the society" and proposed that the Country's educational system should be organised around (a) mass education (b) professional education and (c) higher education. Fifth a Student's Co-ordination Committee in Marathawada was formed in April to agitate for speedy development of backward Marathawada. Despite the Chief Minister conceding some of their demands, bandhs, strikes and other forms of agitation are continuing to push the development of the region and to lower prices. In addition there were a number of incidents in other States. In UP at Allahabad and Lucknow there were violent students' agitations during the Rajya Sabha elections. In Indore a group of students presented the Vice-Chancellor with demands for scrap-

ping the present education system, starting job oriented courses and the grant of jobs with degrees, and on being told that they would be forwarded to the UGC and the government, indulged in arson and violence. In Bombay student agitation succeeded in abolishing all class exams. In Delhi an invigilator was robbed by 3 students whom he had expelled for copying, and in Bombay 4 students were expelled for copying in the SSC examination. The new elements in this brief summary of student agitation during March and April need some thought. First students in 4 States and at the all India level have decided that the present education system should be scrapped. It looks as if the reform proposals that have been made and are being proposed are a case of their being too little and too late. Second one of the States has asked for a closing down of all education institutions for one year to start afresh. Third all of them are deeply involved in the economic system which they want to see changed—starting with inflation and prices, hoarders and smugglers onto various forms of corruption. An interesting economic analysis published in the Economic Times of the Bihar Student agitation—which sparked and led the revolution in Gujarat—undertaken by the Professor of Economics of Gujarat University traces the student upsurge to rise in mess bills. The per student debt for mess charges was Rs. 30 per month in 1972 and Rs. 35 per month in 1973—particularly among those coming from the group with Rs. 300-500 father's income. It is this shifting of income to hoarders and speculators with whom the students believed the government to be in league that triggered their agitation according to this analysis. Now the students have tasted blood. This time they have tasted it without a Gandhi to lead them, as the students in the forties had at that time. For education and society, the writing is on the wall for all to see. It may be that there is still time to act wisely and farsightedly, only because the country is so vast and the movement is still confined to a few though significant spots.

Educational Reforms:

Within the existing examination system, the central evaluation of the SSLC answer papers introduced in this State 5 years ago, was again successfully organised in 17 centres. Over 2.25 lakh students' answer papers were valued by 6,000 teachers which started on April 22 and was completed on May 4. As in the past, the results are computerised to avoid errors and ensure accuracy. The Estimates Committee of the State Assembly has suggested a rescheduling of vacations for schools in this State so that the schools would work in summer and have their long holidays during the harvest season. It also recommended great care in selecting teachers for the State's 1,670 single teacher schools and their early conversion into regular primary schools. To promote fuller use of buildings, laboratories and libraries and avoid increasing cost on these, it recommends the shift system in schools at least in cities and big towns. The only doubtful recommendation is the time bound programme for achieving 100 per cent primary enrolment, which is not possible as long as mass poverty prevails. Under the third All India Education Survey, a comprehensive survey of the School system in this State is underway. What new light this survey of schools facilities, the areas served and details about teacher and students will throw remains to be seen. It can update the data for the planning of education by the State. However the data is published one decade later. It is only in May 1974, that the results of the last survey in 1964 have been published by the Union government in 2 Volumes—Education in India

1965-66 and Education in Universities in India 1965 66. In view of the fact that 2 lakh SSLC students have purchased only 20,000 science textbooks, the government is examining the practicability of banning notes and guides. At the University level, the State government with the support of the Vice-Chancellor of Madras University has proposed the setting up of one or two new universities in order to bring the number of affiliated colleges of Madras University which number 104 and Madurai University which number 74 nearer to the norm of 30-40 colleges per Univerity, recommended by the Kothari Commission. This is a different version to that proposed by the State's Perspective Plan which is to make Madras, Madurai and Annamalai post graduate centres of excellence and bring the other affiliated colleges under a State Council of Academic Awards with 2 or more regional centres. The first step is to make some of the quality institutions autonomous colleges. The Madras Uuiversity has revised 54 courses in 1973, introduced 74 new courses, most of them job-oriented and since 1968 has brought out 108 publications. A Committee is examining the feasibility of a course in communication arts. The humanities, library and hostel buildings for the University Post Graduate centre at Tiruchi and the post graduate extension Centre in Coimbatore are complete. At a two day workshop in March in Delhi sponsored by the Birla Institute of Technology and Science a complete restructuring of science courses at the undergraduate and graduate levels have been recommended. It was noted that the present undergraduate science courses benefit only 1 per cent of the students who proceeded to a research degree. In recommending the drastic revision in methods, teaching and evaluation and a liaison with industry, the Birla Institute's restructured courses which gave a student 3 years of integrated science education, allowing for specialisation only in the fourth and fifth year and for an internship in industry were found useful. The Union government's report for 1973-74 in education proposes regulation of enrolment in higher education to make it conform to the demand for University graduates. How it proposes to do this however, is not clear. It reports that the student enrolment in universities was 3.86 millions in 1973-74, which was a 300 per cent increase since 1960. The number of universities including those deemed universities was 101. In addition to 2 new central universities at Hyderabad and Pondicherry, a national people's university to provide non-formal education is being proposed. A high power committee to evaluate technical education at the first degree level and a separate board of technical education has been set up to advise the Union and State governments. A fourth Institute of Management at Lucknow is proposed and a national voluntary service scheme under which graduates will work for a year in rural areas is planned. Vocationalisation of secondary education, the uniform 10+2+3 pattern, eradication of wastage of and stagnation and multipoint entry and informal education at all stages of school education are other proposals in the report. In connection with opening other avenues of higher education, the Madras University turned down a proposal for correspondence courses because Madurai University was offering such a course. The Union government also announced in the April session of the Lok Sabha, a scheme to provide assistance for poor university students to meet their mess charges—which has some reference to the Gujarat Student agitation referred to earlier. In response to representation by University teachers, the UGC with the support of the Union government has announced new scales of pay which equates university and college teachers

with class one services of the Union government. The State government also announced in the legislative Assembly that it has under consideration drafting a bill to empower the government to deal with erring managements of aided colleges. There have been growing complaints about colleges collecting donations (See Vol III page 512) but the issue is larger than this. At present each college receives 85 per cent of its permissible deficit as a government grant. The permissible deficit is established by a government auditor. The colleges have to find not only the balance but also the part not admitted for grant purposes. The whole financing of higher education in the State needs to be reviewed and colleges permitted to levy fees. There is no reason why the State should subsidise higher education, which upto 80 per cent is the preserve of the well to do classes. As for the Bill to regulate erring managements, the government is awaiting the President's approval of its School Regulation Bill (See Vol. IV pages 43 and 149) and on the basis of its working will draft this legislation.

Technical Education:

A few polytechnics in the State have; with the help of Union government grants for this year to be taken over by the State government next year, introduced sandwich courses. Those taking this 2½ year course have five semesters of which 2 are spent in industry and 3 in the institution. (The other students have 2 years). During the period of industrial training, the student receives a monthly stipend of Rs. 100. The sandwich courses are successful as they enable the student to learn parts of his profession which cannot be taught in the class or workshop but only on the job. The students learn industrial discipline, the staff visit them once a week to watch their progress and the training officers in the factories submit periodic reports on them. The sandwich course students seem more interested in their studies and do better in their practical examinations than the regular students. To some extent this may be due to the brighter students opting for sandwich courses, but it is also due to the work experience giving them a sense of maturity and balance. There are some problems in this successful programme. Some of the firms tend to exploit the trainees and treat them as cheap casual labour. Fortunately this is a minority. Second in the case of very good students industries offer them attractive jobs before they can complete their courses and so cause drop outs. Third in the case of students below 18, exemption from the Factory Act has to be secured as well as insurance against accidents for all students. Finally there is the cost. In addition to the Rs. 100/- stipend, travel and office expenses add upto another Rs. 100/- per month and this is a heavy burden for the State government for next year. But the sandwich system is a must and must be introduced in all polytechnics. Its finance can be found by cutting back on some of the educational expenses, as recommended by State Planning Commission and by contributions from industry. In the coming year, on the recommendation of the Tamil Nadu Technical Education Board, two polytechnics will adopt Tamil as the medium of instruction to facilitate greater understanding of the subject. The experiment will be watched with interest and must be accompanied by an increase in Tamil textbooks. Also it is hoped that the Union government will enable the Madras University of Technology to be launched next year (See Vol. II No. 9 page 28). The Institute of Catering Technology and Applied Nutrition is to upgrade its diploma course into a degree course with a greater emphasis on tourism. The entrance qualification

will be PUC. and not SSLC. Todate the Institute has graduated 203 diploma holders all of whom are quickly absorbed in employment—184 uuder salaried and 19 under self employment. Whether the Institute is wise in turning its diploma course into a degree course is open to question, as the skills needed here are the technician type rather than that of the university graduate. If the Tourist Department is asking for university graduates then it is joining in the general move to overqualify the job requirement, and debase the university degree. The fact that of 850 applicants for the 72 places last year, 85 were graduates and 175 PUC's is beside the point. The Institute may well be a focus for retraining our unemployable graduates. The case for making its award a university degree is however, not proved. In the case of medical education the State government has under consideration the reduction of the intake of students from the present 1,015 to 800 for two reasons. First the quality of medical education is being lowered if, with the current laboratory and clinical facilities, more than 100 students are admited to each college. For 2 of the 8 medical colleges in the State, the medical Council of India has not yet awarded recognition. The Lakshmanaswamy Mudaliar Committee has recommended the admission of 85 students per college, so that admitting 100 is already well above the norm set by the Committee. The second problem is that of employment of the graduates. A long as the graduates will not set up practice in the rural areas where there is a crying need for doctors (and there are some good reasons for their reluctance,) the government itself can employ only 300 of the 900 graduates every year. The medical students have recommended that the intake should be reduced by 20 per cent for the next admission this academic year, to be followed up by reducing it further by 10 per cent in the next 2 years. There is therefore a clear case for limiting admissions to 100 per college and upgrading its laboratary and other equipment facilities Given the overly large migration of doctors every year to other countries at the rate of 15,000 per annum which is the equivalant of Rs. 2.8 crores in capital and Rs. 8 crores in annual recurring expenses and the equivalent of the graduation of the 10 medical colleges, and the long drawn agitation for higher remuneration by the junior doctors and interns all over the Country the Union government has decided to set up a medical education Committee to re-examine the present pattern and problems of medical education. It has also under study the recommendation of the Medical Council of India to derecognise the following 9 medical colleges whose standards of education are low and whose intake is well above their capacity for quality training. The colleges are: in Andhra Pradesh: Rangaraya Medical College, Kakinada and Kakatiya Medical College, Warangal (both private): in Karnataka: Bangalore Medical College, Bangalore (government), Medical College, Bellary (government), Kasturba Medical College, Manipal (private) Medical College, Gulbarga (private) JLN Medical College, Belgaum (private) JJM Medical College, Davangere (private) in Maharashtra: Dr. V.M. Medicl College, Sholapur (private). Also the Union government has under consideration legislation to regulate the functioning of medical colleges which charge capitation fees.

Science:

The Science and Technology Plan for the Fifth Plan period was finalised by the National Committee on Science and Technology, involving a total outlay of Rs. 2,350 crores for 1974-1979. It was presented to the Lok Sabha in March. It provides for the Rs. 1,800 crores for the Central sector, Rs. 250 crores for the

State sector and Rs. 300 crores for the private sector. The plan covers 23 sectors of the economy and aims to harness science for the speedy improvement in the quality of life of the common man, to reach higher levels of productivity and achieve efficient utilisation of wastes. In the field of natural resources, projects in forests, land, soil and wild life are proposed to meet socio-economic needs and conserve the environment. Foresty for instance with 24 per cent of the land area contributes only 2 per cent of GNP, while agriculture with twice that area contributes 50 per cent of GNP, and so the forestry yield can be increased by introducing exotic plants to augment the wood pulp capacity and rehabilitating forests generally. For better utilisation and conservation of water, remote sensing techniques, sediment studies, flood control measures, monitoring environmental characteristics of inland water and a national water bank are proposed. In mineral exploration, study of genetic aspects of minerals is proposed. The plan will involve spending Rs. 520 crores in the last year of the Fifth Plan which would be 0.9 per cent of GNP in that year. The financing would include a compulsory cess on industries for research and technology, a proposal made by NCST and under consideration by the union government. The Central Arid Zone Research Institute, Jodhpur reports the development of a technique for sand dune stabilisation. About 842 hectares of such dunes have been stabilised at Barmer, Bikaner, Churu and Jhunjhunu. In view of the slowly expanding desert, this stabilisation programme and the windbreak tree plantations for 250 kms. at Jodhpur, Jaisalmer, Bikaner, and Churu are important in controlling the movement of sand. The Institute also completed integrated surveys of land, soil water and vegetation resources for some 27,000 sq. kms and has developed nursery techniques for seedlings under desert conditions. In early March, Shaw Wallace laid the foundation for a Rs. 20 lakh R & D project for developing indigenous know-how in the manufacture of adhesives and chemicals, using new sources of indigenous raw materials. The adhesives to be developed are for use by footwear, automobile, aeronautics, packaging wood working and defence and export oriented industries. To ensuse quality, it will have its own testing and performance unit. In chemicals, it will use the rubbers, thermoplastic and thermosetting resins of natural and synthetic origin to meet the needs of consumers in various industries.

Health :

Another group of mini health centres was opened in early April at Bhavani, Vikrawandi and the panchayats outside Thanjavur by the Voluntary Health Service, Madras with the help of local land owners. The last one opened was described in Vol. III page 42 of the Bulletin. The problems faced by this important programme are the apathy of the members in making their small contribution of 50 paise per family and the lack of interest of the Panchayat leaders in the scheme. Another problem is the unwillingness of even the non-graduate para medical workers to go to the village for work. As recommended by State Planning Commission Task Force on Health (Vol. II No. 9 page 32), VHS is now identifying local persons in the village giving them 3 months training to become community health aides. This programme should for financial purposes be assimilated with the government's mini-health or sub centres. It is good that Union government will be giving each such centre during the Fifth Plan 2 multi purpose and family planning workers through whom the rural com-

-munity will be receiving its spectrum of health, maternity, nutrition and family planning service. The Institute of Neurology, in the government General Hospital, Madras is undertaking a survey of stroke patients aimed at understanding the magnitude of the problem in the city and the State, the factors responsible for the stroke and the socio-economic loss to the Community from this factor. In the first stage five centres, each covering a population of one lakh would function in the city, while in the districts similar centres would cover a population of 2 lakhs. The Madras School of Social Work and other social service organisations will be helping in the Survey. A stroke registry will be set up and affected persons will be offered rehabilitation services in all government hospitals and Voluntary Health Services. At the end of April, the foundation stone for the Arignar Anna Cancer Hospital at Karaipettai was laid. This Rs. 27 lakh hospital with 100 beds to be increased to 300 was recommended by the State Planning Commission Task Force on Health. W.H.O. is helping to equip this hospital. The Union government has called for a new co-ordinated national effort on the social, educational and political fronts to make people more conscious of the urgent need for family planning and for bringing down the birth rate to 1.8 per cent by the end of the Fifth Plan and 1.4 per cent by the end of the Sixth Plan. It also announced the setting up of a rolling fund of Rs. 5 crores for making quality drugs available at reasonable prices to rural areas. This Drugs for the Masses programme will supply 100 essential drugs needed by the primary and mini health centres, besides commonly used household drugs. The drugs will be supplied in pilfer proof packings for individual consumption and will be bulk purchased at reduced prices. The allocations for drugs are raised to Rs. 12,000 for primary and Rs. 2,000 for mini health centres, involving a total outlay of Rs. 44.7 crores during the Fifth Plan. This is one aspect of the integrated health, maternity, child health, family planning and nutrition activities of the minimum needs programme in the Fifth Plan. The progress made in this area is seen in the latest census of longevity in India which for males has increased from 32.45 years in 1946 to 50.7 years and for females from 31.66 years to 49.3 years.

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V. Employment

As against the reported 74 lakh job seekers registered in employment exchanges as at May 31, 1973 referred to in Vol. III page 659 of the Bulletin, the Union government released the comparable figures as at 31 December 1973. The number of job seekers registered with employment exchange at that date, December 31, 1973, had risen to 81.51 lakhs with the following breakdown by States in order of the magnitude of unemployment. West Bengal 15.66 lakhs, Bihar, 11.41 lakhs, U.P. 8.42 lakhs, Maharashtra 6.99 lakhs, Tamil Nadu

5.90 lakhs, Kerala 5.24 lakhs, Andhra Pradesh 4.78 lakhs, Madhya Pradesh 4.24 lakhs, Orissa 3.35 lakhs, Karnataka 3.11 lakhs, Gujarat 2.39 lakhs, Punjab 2.05 lakhs, Delhi 1.95 lakhs, Rajasthan 1.78 lakhs, Haryana 1.34 lakhs, Assam 1.05 lakhs, Himachal Pradesh 65,400, Tripura 42,000, Manipur 41,000, Jammu and Kashmir 30,000 and Meghalaya 7,000. Within this context of accelerating unemployment, the Union Directorate of employment reports that at 31 March 1973, the employment in the organised sector was 188 3 lakhs which was an increase of 0.19 per cent since December 31, 1973 compared to the growth rate of 0.6 per cent in March 31, 1973. Employment in the public sector rose by 1.7 per cent during the quarter January-March 1974 to 118.8 lakhs and fell in the private sector by 0.2 per cent to 69.4 lakhs. Employment in plantations and forestry continued to fall by 1.6 per cent, along with small declines in employment in transport and communication. In all other industries the rate of employment rose, in services by 0.8 per cent and in mining and quarrying by 5.4 per cent. The Southern zone had the highest increase by 1.5 per cent, with Andhra Pradesh in the lead at 6 1 per cent. But these increases are far from keeping up with the increase in the number of weekly labour force entrants. Another piece of employment information released by the Union directorate is with regard to the number of mandays lost through industrial disputes in 1973. The provisional figures now released show 16 million mandays lost against the trend figure of 17 million mandays worked out in Vol. IV page 152. This was a much better record than the 20.54 million mandays lost in 1972. Of the 16 million 1973 total, 2.01 million was in the Central sphere and 13.09 was in the State sphere. The trade unions on the whole preferred to settle their disputes in bipartite negotiations and not through voluntary arbitration. On the other hand the half a million educated employment scheme presents a rather sad picture. Upto the end of March it provided employment to 50 per cent of the target, 2,58,314 persons and of the Rs. 81.61 crores allocated to the States for this programme less than one quarter has been spent, at Rs. 20 crores. The total allocation for all employment schemes—crash rural employment, pilot intensive rural employment, drought prone area, SFDA and MFAL and educated employment programmes—was Rs. 230.82 crores in 1973-74, of which expenditures of Rs. 105.58 crores were incurred. In the half a million educated employment programme, UP with a total of 42,446 employed, Bengal with 33,640 and Maharashtra with 26,000 did relatively well, while the Southern States were lagging—Andhra Pradesh 15,339, Karnataka 5,171, Kerala 18,906 and Tamil Nadu 14,640. While Kerala continued imaginative schemes such as the Rs. 60 lakh industrial complex at South Vazhakulam sponsored by the educated unemployed who are contributing Rs. 5,000 each as shares and providing employment to 3,000 young persons, and the Kunnathara 400 power loom complex (Vol. IV page 220) set up by 200 members of the Employees Welfare Association who have subscribed Rs. 40,000, Karnataka is still searching for getting the programme off the ground. There schemes have been purposed for the self employment of 31,000 educated unemployed but the problem is that the persons prefer even low level paid employment to self employment. About 2,000 persons have asked for margin money of Rs. 31 lakhs and 1,400 for hire purchase machinery of Rs. 50 lakhs. There has been no response to Rs. 1 crore of schemes which would help 5,500 people to become craftsmen, taxi

and auto-rickshaw drivers, or establish auto-service centres etc. Teachers, surveyers and nurses are the majority of the employed persons. For 2,000 teacher's posts 3,000 applied, for 800 surveyor's posts 4,000 applied. Over 2,000 persons are being retrained in horticulture, engineering and agriculture. This is another aspect of the system. The unemployed are really unemployables and have to be retrained with skills demanded by the market. In this State a special programme for employing the physically handicapped was launched in March under which 1,606 handicapped have been employed. There are a further 1,443 handicapped persons on the Special Employment Register (Vol. IV page 300) for whom employment has to be found. The most far reaching agrarian reform measure concerning landless agricultural labourers was the Agricultural Workers Bill adopted by the Kerala legislature in March. The Bill covers 40 lakh agricultural labourers who all live below the poverty line. They are now provided statutorily with (a) security of employment (b) wages higher than those fixed under the Minimum Wages Act in deserving cases (c) regulated hours of work (d) an agricultural workers provident fund and (e) settlement of disputes along lines of the Indusirial Disputes Act. This 47 clause Bill provides that land owners who hold less than one hectare be exempted from its provisions, except in the matter of wage payments. In April the poultry farming programme for self employment was launched in this State under the half a million job programme. Each graduate who had undergone intensive poultry training was given a loan of Rs. 1,001. The State Bank which finances the programme is lending Rs. 50,000 recoverable in 18 months. Rs. 12 lakhs from the union grant has been set aside to train 100 educated unemployed and finance their projects, Of the 5 lakh educated unemployed in the State 2,200 are engineering graduates. With the help of financial institutions, the State government has announced a scheme to provide full financial help to assist them in setting up industries, particularly in backward areas. CSIR's January 1974 Technical Manpower periodical contains an interesting analysis of the 1,300 graduate engineers registered with the Delhi live registers in December 1972: (a) 84 per cent of them were civil, electrical and mechanical engineers. (b) 58 per cent were first divisioners. (c) 42 per cent were 22-24 years old and 1 per cent above 35. The average age was 22.5 years. (d) 46 per cent had graduated in 1972, 28 per cent in 1971 and 3 per cent 1967 or earlier. (e) 58 per cent had been on the register for 6 months or less, 18 per cent for over a year and 2.5 per cent for more than 2 years. While they had on the average received their degree 16.7 months earlier, they had been registered for only 7 3 months. (f) 20 per cent were not interested in employment outside Delhi. (g) 15 per cent want a scale of Rs. 300-400, 32 per cent between Rs. 400-500 and 13 per cent between Rs. 500-600 per month. (h) The average salary expected by a civil engineer was lowest among all engineers and the highest (Rs. 421) among electronics and telecommunications engineers. (i) Engineers 20-22 years of age demanded a salary of Rs. 435, the 24–26 age group a salary of Rs. 360 and higher levels as age increases. This profile and anatomy of engineering unemployment can help in planning their training, employment and self employment programmes.

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VI. Other Items

Indian Economic Association:

Due to accommodation and other administrative difficulties, the Annual Conference of Indian Economic Association will not meet in Bangalore. On the invitation of the Vice-Chancellor of Andhra University, Waltair the Annual Conference will meet at Andhra University, Vishakapattinam, on December 27, 28 and 29. The Honorary Local Secretary of the Conference is Dr. B. Sarveswara Rao, Professor and Head of the Department of Economics, Andhra University, Waltair. The Conference will be followed by a Seminar on December 30 and 31 on Improvements in the Teaching of Economics, which will be held in Andhra University, with the financial support of the University Grants Commission. Dr. B. Sarveswara Rao will be the Chairman of the Seminar to which 30 teachers of economics from the Universities and Colleges of the Country, who are engaged in improved teaching methods are being invited. Each participant is requested to submit by 1 November a paper covering (a) problems encountered in the teaching of Economics, (b) teaching in the vernacular language (c) Improvement programmes in text books, content, teaching and learning methods and (d) evaluation procedures. On the constitution of the Association, two more meetings were held on March 25 in Delhi and on April 1 in Hyderabad and in light of the replies received from 70 members to the questionnaire sent to them (see last issue Vol. IV pages 302 & 303) the fourth version of the draft Constitution and Rules of the Association has been established. The Association's legal status is being regulated as a Charitable Trust eligible for tax exemption. The Honorary Secretary Prof. V. Shanmugasundaram is representing the Association at the Fourth Triennial Council of the International Economic Association at Budapest on August 19. Government permission has been requested to invite the Fifth World Congress of the International Economic Association to India in 1977 and for this purpose a government grant of Rs. 5 lakhs to house and board 1,000 economists has been requested. It is hoped that Prof. V. Shanmugasundaram and some other economists will also attend the Fourth World Congress of economists at Budapest on August 22-26. Arrangements under the ICSSR visiting Social Scientists Scheme are being made for Prof. A. Lerner (USA) and Prof. G. Skorov (USSR) to visit India for 4 weeks to attend the seminar and go round the major university centres meeting Economics staff and for Prof. Reddaway (UK) and Prof. T. Mathias (UK) to stop off a week in India to attend the Conference and Seminar. In view of the rising costs of paper and printing, the subscription of the Indian Economic Journal is being increased from Rs. 30 or £2.50 or $6.00 to Rs. 40/- or £3.50/- or $ 8.00.

Inter disciplinary research methodology seminar:

The Inter disciplinary research methodology seminar on the poverty problem was held at the ICSSR Regional Centre, Osmania University, Hyderabad from April 1-7 under the chairmanship of Dr. Jussawalla, Principal and Professor of Applied Economics, Dean, Faculty of Social Sciences, Hyderabad. It was attended by 22 economists, 5 sociologists, 3 geographers, 2 political scientists, 3 psychologists, 1 educationist, 1 management specialist and 1 historian. The Seminar had papers presented by Prof.

Satish Saberwal (Sociology, JNU), Prof. M. Palanisami (Statistics, Gandhigram), Prof. C. T. Kurien (Economics, MCC), Prof. T. E. Shanmugam (Psychology, Madras), S. G. Sri Kantia, (Applied Science, National Institute of Nutrition), Prof. N. Subramanian (History, Madurai), Prof. A. D. Puranik (Economics, V.M.N I. of Co-operative Management), Prof. G. Parthasarathy (Economics, Andhra University), Prof. A. Ramaswami (Economics, Annamalai), Prof S.A. Mookerjee (Geography, Nagpur), Profs. S. Jussawala, Parameswaran and Lalith Sen, (Inter disciplinary, Osmania). Each of these papers presented methodological issues in dealing with India's poverty problem, and in addition there were oral presentations by Prof. G. Mathur (Economics, Osmania), Profs. S. Parvathamma and Lakshmanan (Sociology, Mysore and Osmania), Prof. S. Das Gupta (Sociology, Banares), Prof. Durganand Sinha (Psychology, Allahabad), Prof. Rashiduddin Khan (JNU, Delhi) and Prof. Thirtha (Education, Bangalore). There were three results that this first seminar in the Country on this difficult new terrain of interdisciplinary research methodology produced. First each disciplinarian got to understand the conceptual framework and methodology used by the other 6 disciplines in dealing with the problem of poverty. Second the possibility of merging concepts and borrowing from each other's methodolgy began to emerge particularly in relation so some disiciplines such at Economics and Sociology. Third a long term interdisciplinary programme on povery is being drafted by a group led by Dr. Sarveswara Rao and its execution by the Southern Universities with the help of ICSSR being investigated. Thus this Seminar at which 15 universities in the South and Nagpur University and V, M. Institute of Co-operative Management were present covering 7 disciplines—Economics, sociology, Geography, Political Science, Psychology, History and Education issued the following declaration at the end :

1. The Seminar brought together social scientists from the different Universities and research institutes of the country representing the fields of economics, sociology, history, geography, Political Science, management, education and statistics. They met against the background of persisting mass poverty and the growing unrest in the country and their agonising awareness of the magnitude and intensity of the problem. A dialogue was established among the exponents of the disciplines with the objective of understanding the nature and dimensions of the problem and to suggest an interdiciplinary methodology for organising research into it since the complexity of the problem defies a traditional unidisciplinary approach.

2. Starting with the widely accepted definition of the poor as those who lack the minimum requirements of food, clothing, shelter, medical and educational facilities the Seminar dealt with the causes and manifestations of poverty in the country and recognised it as intrinsically related to the existing socio-economic structure and aggravated by the economic and social policies of the past. It was also noted that the problem has assumed such critical dimensions that it has become imperative to mobilise opinion in pressing for its solutions.

3. The discussions at the Seminar and the interaction among people drawn from various disciplines showed that poverty results in many forms of personal and social degeneration sapping the energies and potentials of the nation. It causes malnutrition and the consequent retarded growth of children, various forms of personality deterioration, the disruption of

family life, growing caste, communal and regional tensions, the perpetuation of traditional values. It was also noted that the increasing concentration of the ownership of land and industrial property in the hands of a few, the all-pervasive impact of black money, to the cancerous growth of corruption and economic crimes, and the distortions in the distribution system have made the problem of poverty even more glaring. The rich also use the educational and political processes to their own advantage. The pernicious hold of the few who are rich and powerful over the structure of society makes it difficult to bring about any effective measures of reform within the existing framework.

4. In spite of the seriousness of the problem the social scientists have not addressed themselves adequately to the study of the issue in all its demensions so far. The Seminar urges the Indian Council of Social Science Research to give top priority to such studies.

5. The Seminar recognises also that the study of poverty in our context cannot be merely an isolated academic exercise. The social scientists have the responsibility to examine the deeper social forces in operation and to comprehend the total dimensions of the phenomenon of poverty. Such understanding calls for policy-oriented and action-oriented research. It must also be enriched and deepened through action. The involvement of the social scientists with the problem of poverty gives them the opportunity to appreciate the relationship between cognition and action in the dynamics of the social process. The task of the social scientists today is, therefore, to comprehend and interpret the phenomenon of poverty and to be actively associated with processes and programmes of change directed to eliminate it.

6. Specifically, the social scientists today have the responsibility—

(i) to direct their studies and research into the analysis of poverty, searching for its causes and suggesting measures for its eradication ;

(ii) to evolve a pattern of socio-economic development and a style of living compatible with the realities of the Indian situation ; and

(iii) to work for a radical transformation of the social structure involving changes in existing property relations, educational systems and political processes to ensure that inequalities are reduced, opportunities are equalised and a healthy democratic society informed by freedom and justice is evolved.

Tamil Nadu's Science and Technology Plan :

The State Plan for Science and Technology (Vol. III pages 727-730) entitled "Science in the Battle Against Poverty" was released by the Education Minister at a function in Rajaji Hall on January 5, 1974 and was the subject of 2 Seminars. The first was organised on March 2 by the Director of IIT, Guindy and brought together scientists and technologists from Madras University, IIT, MIT, College of Engineering, Guindy, CSIR complex, Madras, AC College of Technology, MATSCIENCE and government engineers. At an all day review of the Plan, the scientists and technologists endorsed it, pointed to gaps in machine tools and energy and set up a preparatory committee chaired by the Director, IIT to prepare for the execution of the Plan. The second seminar

was organised on April 26 by the six chambers of commerce in the conference hall of the South India Chamber of Commerce and Industry. At this seminar the plan was reveiwed in light of the R & D being done by the industries in the State and a Committee of 6 representatives of the 6 chambers was set up to collect and publish information on the R & D now underway in the private sector and to aid the State Planning Commission in executing the Plan.

Energy Crisis.

The South Indian Steam and Fuel Users Association organised a national seminar on March 15-17 on the energy crisis. The Seminar was topical and timely and brought together some 200 engineers and technologists working in industry from all over the Country. The Seminar addressed itself to the effects of the crisis, the coal bottleneck and the electricity short supply and endorsed the recommendation made in the Presidential address for the urgent need to establish a National Energy Board to develop and execute a national policy to co-ordinate the work of the many competing and conflicting ministries and agencies in the energy field. It also recommended techniquee for saving on energy by industries and of changing the energy base and mix of the economy.

Inflation and the Fifth Plan :

The Young Writers' Forum, Tamil Nadu organised a seminar on April 28 on Inflation and the Fifth Plan. There was a good analysis of the problem by five economists and a general agreement that money supply and bank credit should be cut back, deficit financing kept down, production of necessities rapidly increased and the distribution system streamlined and tailored. There was little time at the seminar for a discussion of the issues.

Autonomous Colleges :

140 Principals of the best university colleges in the Country met in a national conference at Indian Social Institute, New Delhi from March 25-30. The first national conference aided by the UGC examined and agreed upon four major issues: the objectives of autonomous colleges: their curriculum and study programmes; their rules of admission and evaluation procedures: and the financial implications. These colleges are among those ready for autonomy. The UGC plans to hold four regional conferences to further prepare and push forward the programme for the autonomous colleges. Now it is necessary to start wherever we can. In the South, Andhra University and Madurai are ready and they should be allowed to go forward.

Tata Institute of Social Science :

The review committee of the Tata Institute of Social Science held its second meeting on March 21 and 22 when it interviewed some of the alumni of the Institute about their suggestion for improvement and change and also received further evidence from the departments of the Institute on their current and future work. It reviewed in light of papers prepared by the members of the Committee the overall impact of the Institute in the academic and policy fields, the future changes in Social Work training, the restructuring of the department of Personnel Management and Social Welfare, the perspectives for research by the Institute, the administrative and academic structure and the future development called for by the rural society that we are living in. A third meeting of the Committee on April 15 met with the Governing Body of the Institute and reviewed some

of its conclusions as they affect the staff and the structure of the Institute. As a result of this meeting it was decided to add a chapter on the financial implications of the recommendations of the Committee.

ICSSR Planning Committee:

The ICSSR Planning Committee met in New Delhi on April 12 and 13 and in light of the Review Committee report drafted the Fifth Five Year Plan for the approval of the Council. The programme follows closely the recommendations of the Committee and proposes a Rs. 950 lakh programme for the Fifth Plan. The programme and policy follow the review committee report and cover (a) research promotion (b) research survey, (c) institution building (d) documentation (e) co-ordination with other bodies and (f) administration. With this decision, the Council has quickly followed up the review committee decision and is now moving into the Fifth Plan. The innovations in the plan are the twelve priorities of sponsored research and the network of ICSSR research centres.

Tamil Nadu Council of Historical Research:

The Tamil Nadu Council of Historical research had its first meeting on April 29. For the four research fellowships it was awarding it received 95 applications. The Council proceeded to examine in detail these applications and applying the criteria of hypothesis, methodology, sources, language and background selected 4 candidates for historical research for 1974. The Chairman of the Council who is the Minister of Education was absent as he was away in Kashmir. The recommendations have been presented to him for approval.

UNESCO-Tamil Nadu Committee:

The UNESCO-Tamil Nadu Committee met in Madras on November 13 and reviewed the progress of work in the State. It arranged for the UNESCO Courier, Tamil edition, to be adequately financed and for its contents to ensure full translation of the original English articles. The UNESCO grant of $ 6,000 to the International Institute of Tamil Studies was noted and the balance of $ 4,000 was requested. On the preservation of temples programme, the renovation of the third temple—Varadaraja Perumal at Kancheepuram and the fourth temple—Natarajar temple at Chidambaram were discussed and UNESCO assistance requested. The celebration in the State of the International Population Year was discussed and it agreed to request the Public Department to organise a public meeting at which the Ministers of Education and Health would speak. Colleges will be invited to organise essays and debates and the Director of Medical Education help Medical Colleges to hold celebrations on the year. The development of non-formal education recommended by the State Planning Commission and included in the State budget was discussed and the assistance of UNICEF and UNESCO invited.

UNESCO-Maharashtra State Committee:

Two meetings of the UNESCO-Maharashtra State Committee were held in Bombay on March 21 and on April 15. The major project that the Committee is planning is the preservation of Ajanta frescoes and for this purpose a draft resolution for inclusion in UNESCO's programme and budget for 1975-76 was drafted and forwarded to UNESCO through the National Commission. The plans for inaugurating the Centre of Performing Arts in 1975 with a joint UNESCO

Centre symposium were discussed and UNESCO assistance to the centre was finalised. The Committee also established a State programme to celebrate the International Population Year and programme to develop sports in the educational institutions.

C. P. Ramaswamy Iyer Foundation:

The C. P. Ramaswamy Iyer Foundation is a trust devoted to promoting culture, humanities and the arts. Among its activities, it organises foundation lectures every year. On March 16, the Foundation organised a lecture on planning problems and techniques by the Director of the Institute.

Andhra Mahila Sabha:

The Standing Committee of the Andhra Mahila Sabha Nursing Home had 2 meetings on January 22 and April 5 at which the working of the Nursing home during the year was reviewed. A sub-committee was established which drew up a programme of improvements of the children's ward, the special ward and the observation ward. As a result special funds for the improvement of the Special Ward have been raised, while the alternative to improve the OPD or start on a more modest scale in the Children's Ward has been referred back to the sub-committee. The programme and Budget for 1974-75 was reviewed and approved with a ceiling of Rs. 30.000/- as deficit.

Board of Continuing Education:

The second meeting of the Board of Continuing Education (See Vol. IV page 157) was held on March 24 at which the State government's approval of the project for the education out of school youth was noted. On that basis, the selection committee was set up to appoint the principal and 4 staff members, arrange for their orientation at the Technical Teachers' Training College or the State Institute of Education in July and launch the project in August. The Board was expanded to include 6 more members, making it a 15 member board. The Board authorised renting the corporation school in the Beach Slum area and approved the related expenses. The project cost is around Rs. 50,000/- per annum. It is the first project implementing the State Planning Commission programme for non-formal education for drop outs.

Children's Encyclopaedia :

Under the auspices of the Tamil Academy, the seventh volume of the Children's Encyclopaedia was released on April 22 at Sastri Hall, Madras. The encyclopaedia which is a unique creation of Thiru Avinasilingam Chettiar is one of the few children's books in Tamil available in the State. The excellence of the seventh volume was commended and plans for the 3 further volumes and a second edition to start next year were discussed.

Rotary Club :

The Central Rotary Club at its lunch meeting on April 23 had a useful discussion on the oil crisis and the Fifth Plan on the basis of a brief presentation of the problem by the Director of the Institute. There was general agreement that all industries must transform their fuel base and that for this the present mess in coal mining and delivery needs to be cleared. There was also agreement that next important step to save the Fifth Plan from further deleterious effects of the oil crisis was to change the product mix of our fertiliser plants and introduce a hydrocracker unit in each of them which would save a total of 7.5 million tonnes of oil consumption.

Tirupattur Educational District Science and Library Improvement Conference:

The Conference organised by the Tirupattur Educational District on Science and Library Improvement at Katpadi on April 21, was an eye opener. It brought together some 200 teachers and over 1,000 school students who organised an impressive science equipment exhibition, which was all made by the teachers and students along lines of UNESCO's source book for science teaching. The only lack in this improvised and innovative display was that the rural problems of the science of agriculture, forestry, poultry and fishery were not adequately dealt with. There was also a good display of school books but whereas 16 rooms were filled with science exhibits, only 2 rooms were devoted to books. The conference decided to make a strenuous effort to increase book production in the district, to make science meaningful to rural students and to start out of school and adult education programmes to the educationally deprived in the district. The district is led by one of the most efficient and enthusiastic district educational officers in the State.

School and College Days:

St. Ebba's Girls School celebrated its 15th year by organising two very successful performances of the play Indrajit on March 5 and 6. The parent-teacher association which organised the event is raising funds to help build a multi purpose hall for the school. St. Christopher's Training College held it annual day on March 9. The College is one of the pioneer teacher training colleges and one of the oldest in the State. Its record for the year was one of solid success in teacher education. What this and other colleges lack is a programme of educational research to back up their teacher and training programmes. D. A. Vaishnav College celebrated its college day on March 7. It was the tenth year for the college which has developed into an attractive campus and serves mainly the neighbourhood students, many from poor middle class families. An attractive painting exhibition by the students in the Student Union hall demonstrated once more the wealth of artistic and creative talent in the student community. Jain College, Meenambakkam celebrated its founder's day on April 7. The pioneering work of the college in running evening classes for those who are at work but who wish to pursue further education was particularly commended. The teachers used the occasion to indicate the new directions in which the teaching and community service of the college should be organised.

April Development Seminar:

The paper for the April Development Seminar, Labour Planning and Family Planning—Man, Market, Manpower utilisation and the Demographic Transition, by Dr. Mrs. Hamsaleelavathi, Lecturer, Department of Humanities, IIT, Guindy, together with a summary of the discussion of the paper in the Seminar room of the Institute on April 25 appears as the first article.

Second Article:

A paper on the Energy Crisis—the Way Out, appears as the second article in this issue.

Fourth Census of Social Science Research:

The results of the fourth annual census of Social Science Research in Tamil Nadu is special article in this first Special Number of Vol. IV.

HEALTH AND FAMILY PLANNING—MAN. MARKET, MANPOWER UTILISATION AND DEMOGRAPHIC TRANSITION

By

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Whereas it is but alarming to know that in the year 2,000 every sixth person will be an Indian, it is nevertheless consoling to know, that, India for generations to come, need not look around for markets! Over-production or under-consumption will never be a problem as far as India is concerned, if there is more equitable distribution of income! But what could have been a blessing is a curse to Indian Economy, for the composition of the population is such, that Man is there, Market is there, but since Manpower Utilization is not there, man is devoid of purchasing power, hence he precipitates the problem of insufficient production nature and consumption, and sub-standard consumption. This is not only a problem of unemployment but also a demographic factor—the composition of the population—the dependency problem.

The present age structure of our population demands heavy investment in its non-production groups, particularly the younger age groups. It will continue to remain so, for years to come, decades to follow. This paper attempts to measure and analyse this problem.

The author does not under-rate the other obtacles in the way of development efforts, such as low capital formation, lack of technical personnel, balance of payment difficulties, low rate of savings—but feels, that the brake offered by the composition of the population, which could be directly studied through dependency is greater in magnitude and intensity than any other problem. This in fact could be considered the cause and the others, the effect. For, let us take one example, savings. Empirical studies clearly point out an inverse relationship between population growth and rate of savings, Since savings is related not to the level of per capita income, but, to the rate of rise in per capita income and its functional distribution, there is a clear relationship between the marginal propensity to save and the size of family—and hence the dependency ratio.

Demographic Aspects of Problems of Manpower and Utilization :

Whereas all planners, talk of efficient utilization of Manpower all Manpower planning programmes seem to have been ill-fated and complete, for, the tendency had been to take the number and not the content of manpower. The influence of demographic factors on efficient use of manpower had been ignored.

The characteristics of this part of the globe are

(a) its rapid population growth,

(b) surplus of unskilled labour,

(c) shortage of skilled labour,

(d) young age distribution and high juvenile dependency ratio,

(e) low work participation of women.

Changes in fertility cannot affect the immediate labour supply, since, those who will enter the labour force over the next fifteen pears are already born. But the basic components of fertility and mortality determine the quantity of Manpower supply and its age structure. The labour intensive measures, though they solve the quantity problem, are no panacea, for more unskilled labour in-put, will affect output and wastage of capital, which may not be available for current consumption, giving rise to inflation and income shifts with possible fall in real wages.

The drastic reductions in death rates in recent years, due to improved health facilities have made the effect of reduction in fertility null and void. Since still much is desired by way of improvement of health conditions, which is obvious from the differential expectations of life of the popularly known down trodden section of our populations namely the low income groups, this tendency will continue for many more decades.

Hence, on the analysis of labour force structure and planning, the relationship between economic, social and demographic factors, need to be closely examined. Among the many demographic factors, the paper deals mainly with the rate of population growth and changes in age structure, in determining the absolute and relative rate of growth of labour force.

Reference however needs to be made to the uneven distribution of population and its relative differential fertility. India has shown the same characteristics of the other Asian countries, registering rapid growth of major cities and lesser growth of smaller urban centres.

Since economic activities depend to a large extent on consumers' demand and on the supply of human resources with selective characteristics, the concentration of economic activities in turn results in concentration of population too. These factors affect differently the levels of fertility and mortality in different areas.

Deliberate steps to shape the pattern of industrial concentration will affect the pattern of settlements and shifts of population, though this is no solution to the adverse population age structure.

When the population size is increasing by leaps and bounds, the trend of demographic factors generally changes slowly and the cumulative effects of its changes over a long period of time may be very great, and so advantageously bring about changes in future manpower and consumer goods requirement. But this change is of a very long range character.

The problem of inadequate utilization of human resources and shortage of skilled manpower will remain, even if success were achieved in reducing fertility within a short period, because, there is an inevitable time lag in the effect of falling birth rates on the labour supply. Manpower planning in the long range perspective of future growth and structure of the population is the only cure.

Size and Structure of Population and the Growing Labour Force :

The population of India which grows at a rate of about 2 per cent per

annum shows also, substantial total surpluses of males. The age group 15-59 years constitutes but half or slightly more than half and will continue to remain so, as the population is in the demographic transition stage, and is young. When ageing of the population sets in, there will be more old persons, fewer very young persons but same young and middle aged.

The age structure of the population can also be characterised in terms of the "dependency ratio", measured by the number of persons below the age of 15 and above the age of 60, per hundred adults, specially males and that part of females who may seek employment in the age range 15 to 59 years. In India there are about four persons in the dependent age groups for every person in the non-dependent age group.

Further the relation between dependents and producers in the population can be calculated considering the census statistics of the economically active and the inactive. It is much less than 50 per cent inspite of the fact that it contains persons under-employed too.

Since women do not participate in economic activities as much as men do, the ratio of dependent males and females (below age 15 and above 60 years) and 2/3rds of females of age 15 to 59, to males of working age 15 to 59 along with about 1/3rd of female population of age 15-59 (since work participation ratio of women is about 30 per cent) may be regarded as an indicator of the economic dependency. Needless to repeat that economic dependency istself is an indicator of distribution of income and potentiality of markets and in turn, growth of economy.

In short, even though fertility decline would not affect the labour force for about 15 years, it may reduce the load of dependency and therefore it would, it is hoped, make possible, higher rate of capital formation. But when is it going to take place?

Since there is already an accumulated backlog of unemployment and underemployment as a result of slow rates of economic growth, additional productive employment needs to expand at a much faster rate than the annual growth rate of the labour force. To start with, the annual addition to the labour must be provided with additional capital. But with the continued high dependency ratio, there is not much scope for investment through domestic savings. A transitional population like the Indian population, in which both mortality and fertility decline, gives little hope of decrease in dependents even when all non-dependent males and females (15-59 age group) of the population, somewhow find employment, as long as the "demographic transition" continues. The question is when is it going to end?

It has already been calculated by experts that, countries with rapidly growing populations, are compelled to undertake capital intensive investment at the rate of 20 per cent or above of the national income and that should be sustained for some decades, before the problem of unemployment could be solved. Paradoxically, capital investment does not take strides side by side with labour intensive investments of developing economies and definitely not with a labour market, growing simultaneously boosting the dependency burden! That is not all.

The problem of raising the level of investment raises many more complex issues in fiscal, monetary, financial, trade and foreign aid policies.

It is agreed, that the aim of employment policy is not merely to create employment but also to provide, to the labour, employment of rising levels of productivity or else, the economy will fail to sustain the created employment opportunities. Hence, mere expansion of investment will not go a long way. It requires the development of human resources too. In a country like India, where, 75 per cent of the population is functionally illiterate, a huge investment in education and training is possible, only when the dependency ratio decreases, releasing the capital required for the young for education and training to develop them into a better labour market.

Prospective Population Trends and Dependency Ratios:

The population projection for India upto 1991, has been worked out by Dr. O. P. Vig, sexwise and five yearly age-group-wise, and an attempt is made here to calculate how long it would take for Indian population structure to change its composition, to get an advantageous age structure distribution, conducive to economic growth, i.e., when dependency ratio will be just one. From the year 1991 onwards, the trend of population growth is studied and through the method of deferences, the decade is earmarked.

Dr. O. P Vig's population projection is based on the actual average achievements of the family planning programme, 1966-71 and annual targets set by the target setting committee. Birth rate is taken as a measure of fertility. The future mortality trends are assumed in terms of expectations of life at birth. Net migration is assumed to be negligible.

Conclusion:

The projection of population and its dependents through trend analysis, clearly points out, that only somewhere between the years 2006 and 2011, Indian population would get over its structural draw backs, strike a balance between dependents and non-dependents and give a fillip to economic development when the growth rate will take-off – to considerable heights – if continued effort to restrict population is undertaken.

APPENDIX

TABLE—I—POPULATION PROJECTION OF INDIA BY AGE AND SEX

MALES (in thousands)

Age Group	*1961*	*1966*	*1971*	*1976*	*1981*	*1986*	*1991*
0-5	33,690	40,413	44,326	44,609	443,18	46,959	50,027
5-10	28,822	31,411	38,640	42,844	43,521	43,569	46,450
10-15	25.924	28,001	30,948	38,186	42,451	43,219	43,349
15-20	23,252	25,172	27,566	30,556	37,797	42,112	42,956
20-25	20,762	22 387	24,605	27,054	30,095	37.343	41,720
25-30	18,475	19,631	21,769	24,048	26,560	29,661	36,931
30-35	16,302	17.468	19,113	21,222	23,564	26,142	29,307
35-40	14,083	15,424	16,837	18.548	20,718	23.124	25,768
40-45	11,841	13,193	14,739	16,217	17,988	20,216	22,683
45-50	9,690	10,945	12,453	14,034	15,562	17,383	19,655
50-55	7,675	8,779	10,138	11,648	13,244	14,805	16,656
55-60	5,819	6,750	7,906	9,231	10,714	12,296	13,862
60-65	4,166	4.890	5,821	6,906	8,162	9.579	11,108
65-70	2,762	3,266	3,948	4,775	5,750	6,891	8,192
70+	3,147	3,512	4,160	5,073	6,259	7,736	9,653
Total	226,410	251,242	282,969	314,951	346,703	381,035	418,199

FEMALES

Age Group	*1961*	*1966*	*1971*	*1976*	*1981*	*1986*	*1991*
0-5	33,331	38,060	41,227	41,568	42,071	43,942	46,817
5-10	28,031	30,980	35,916	39,457	40,542	41,146	43,289
10-15	25,009	27,358	30,376	35,367	39,084	40,195	40,894
15-20	22,306	24,395	26,808	29,887	35,007	38,722	39,923
20-25	19.815	21,596	23.753	26,225	29,466	34,556	38,349
25-30	17,495	19,064	20.917	23,129	25,771	28,998	34,139
30-35	15,069	16,746	18,385	20,293	22,668	25,298	28,589
35-40	12,558	14,345	16,074	17,766	19,824	22,183	24,875
40-45	10,237	11.891	13,702	15,462	17,282	19,320	21,728
45-50	8,237	9.629	11,285	13,097	14,946	16,737	18,808
50-55	6,492	7.637	9,017	10,652	12,517	14,315	16,126
55 60	4.938	5,872	6,993	8.337	9,998	11,779	13,570
60-65	3,597	4,284	5,178	6,245	7,593	9,137	10,869
65-70	2,469	2,925	5,361	4,374	5,412	6,609	8,054
70+	3,256	3,466	4.005	6,242	6,814	8,023	9.779
Total	212,840	238,249	268,996	298,101	328,995	360,960	395,709
Grand Total	439,250	489,491	551,965	613,052	675,698	741,995	813,908

Source: O. P. Vig, *Economic Impact of India's Family Planning Programme on School Age Population during 1971-1991*. Table VI.

Summary of Discussion

At the Seminar held in the Seminar room of the Institute on Thursday, the 25th of April, the author was invited to clarify the following points when presenting the paper. These included the concept of savings as a function of rising per capita income, labour intensive measures leading to wastage of capital when the labour was unskilled, definition of demographic transition and the source for the percentage given for functional illiteracy in India. Further queries raised were the meaning of work participation of women and youth particularly in rural areas and the basis for computation of skilled labour.

Introducing the paper, the author said that it was an attempt to study the effects of a population structure with a relatively large younger age-group and a high dependency ratio on production, consumption and effective demand in the Indian economy. Clarifying the concept of savings as a function of rising per capita income, she pointed out that such a rise was linked to a fall in the propensity to consume at higher income levels. In under-developed countries the rate of domestic savings was very low compared to developed countries. Regarding work participation of women and youth in rural areas the census definition of employment had been used and this did not consider agricultural work as employment when it did not lead to an earned income. Capital wastage arises in labour intensive programmes when a large proportion of the labour force is unskilled and capital has to be expended in providing them the necessary minimum training. The salient features of demographic transition are a decline in death rate and an eventual drop in birth rates. In a developing country death rate drops earlier and there is a rise in life expectency and in population. The period before an equilibrium is achieved is characterised by a very young non-productive age group and this pre-equilibrium period is the demographic transition. The percentage of functional illiteracy refers to the illiterate and those literate without formal education as set forth in the census. Calculations indicate that countries like India with rapidly growing populations require that sustained capital intensive investments at the rate 20 age of GNP over several years is necessary for adequate growth. The age structure of our population, however, calls for heavy investment on its non-productive age-groups and is the biggest single brake on our development effort and a significant cause for low capital formation, lack of skilled personnel etc. The index of dependency is the ratio as shown below:

Males and Female belows 15 and above 59 + 2/3 of the Females between 15 and 59 years

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Males between 15 and 59 + 1/3 of females between 15 and 59 pears, assuming the work participation of women is about 30 per cent.

The backlog of unemployment, the slow rates of economic growth together with the need to expend productive employment at a faster rate than the annual rate of growth of the labour force and the transitional problems posed by the population structure do not promise an early solution of the demographic and economic drawbacks. The trend analysis of population and the dependency ratio, based on Dr. O. P. Vig's population projection shows that a balance between dependents and non-dependents can be struck between 2006 and 2011 and handicaps to economic growth overcome.

In the discussion that followed, the paper was commended for its logical and consistent approach. However, the definitions and categorisation of the 1971 census which were its conceptual frame were described as inapplicable to developing countries. The Dantwalla Report points out that using magnitudes formulated in developed countries in computing labour force participation is a source of error. For example the agricultural work by women if unpaid and part time is not recognised as labour. A realistic definition of employment should include women working not only in the fields but also at home, using a system of shadow prices for computation of GNP. Referring to the population projections, an analysis of the figures for 1971 and 1991 shows the possibility of an earlier breakthrough in terms of larger productive age group and a lower dependency ratio. It was pointed out that a revision of definitions would entail changes in methods of national income accounting over the entire field of national economy. The instance of OECD countries including household operations in their GNP computations was also cited. A system of shadow pricing would, it was felt, make GNP figures more reliable. The time lag in the publication of data met with crticism. Delay in publication usually means that it cannot be used in policy planning. An extreme instance of such delay was the survey of industries 1968 being published in 1972. In the USSR, crucial figures were available in one month and complete statistics in 3 months. In this connection attention was drawn to the fact that the census enumerators were not properly trained. The questionnaire had to be simply framed so that it could be understood and answered by the people. Information elicited, however, showed considerable confusion. A typical example is the question on age where answers show a marked preference for 5 year intervals. Vital statistics and school registration are other areas where precise information is difficult to obtain. Developed countries had their own demographic problems. An ageing population, reduction in the work force and progressively heavier expenditure on social security were some of these. It had also to be borne in mind that the work participation rate for women varied from country to country. The population of India grows at a rate of about 2 per cent per annum and changes in fertility cannot affect immediate labour supply as those who will enter the labour market are already born. This factor is to be taken into account for manpower planning.

An inescapable conclusion is that our economists and demographers must shed their reliance on Western models in evolving concepts and definitions and evolve models suitable to the needs of our developing economy so that the fruits of their investigations may be sensitive instruments of policy determination.

ENERGY CRISIS

FUEL AND POWER SHORTAGES

The energy crisis facing the Country has been gradually abuilding gathering momentum during the last 12 months. All forms of fuel and power have been and are in short supply.

Coal is in short supply. Against a target of 79 million tonnes for this year, which the Ministry of Mines has repeatedly assured us will be attained, the Railway Minister let out the disturbing fact, when introducing his budget on February 26, that the Railways will be transporting 10 million tonnes less this year than last year, when 71 million tonnes were moved. Here then is this year's gap of 61 million tonnes of coal supply against the minimum demand of 79 million tonnes. The result has been the February closing of TISCO and the partial closing of all Hindustan Steel Plants, the reduction of cement production in Tamil Nadu and other States to 33 1/3 per cent of its installed capacity, the cancellation of many regular train services, extensive damage to boilers and furnaces due to the poor quality of coke and coal and the skyrocketing of soft and hard coke prices—soft coal, against a pithead cost of Rs. 65 per tonne selling at Rs. 175 per tonne in Calcutta and hard coke prices spurting from Rs. 220 to Rs. 600 per tonne in Punjab. To this should be added the poor lignite performance in the State. Against a potential of 6.5 million tonnes, Neyveli was raising less than 2 million tonnes last year.

Electric power—hydel, thermal and nuclear based—is in equally short supply. Last summer the Country's deficit was around 35 million units a day, over half being in the South, particularly in this State which imposed on itself the brutal 75 per cent power cut. The deficit is continuing in this State, Andhra Pradesh, Haryana, Punjab and Uttar Pradesh, spreading now to West Bengal and Assam. Here again the results have been extensive cut back in the production of all industries, lay off of workers (the Sonepat industrial complex in Haryana has last week closed down, laying off 10,000 workers) and over use, with no time for periodic overhauling, of the thermal sets. Within this electric power deficit, nuclear energy has been for the present almost a non-starter. The original target of 5,000 M.W. for nuclear energy has been steadily reduced down to 1,300 K.W. because of the longer time taken to develop the needed technology and the difficulty of obtaining the required equipment from abroad. The result is that Kalpakkam will not become critical till around the end of the Fifth Plan, Rajasthan is still not over its teething troubles, Narora will not become operational till the Seventh Plan and Tarapore is unable to meet the demands on it. Due to the closing of one of its units, Gujarat had to impose a 50 per cent cut on high tension consumers and 10 hours of load shedding in its agricultural sector from February 1st.

The Country's traditional energy—wood and cattle dung—are of course in perennial short supply. Of the 230 million tonnes of dry cattle dung, we use 70 million tonnes as fuel. The consumption

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* Extracts from the keynote address by Dr. Malcolm S. Adiseshiah at the South Indian Steam and Fuel Users' Association's National Seminar on "Energy Crisis" held at Hotel Asoka, Madras on the 15th March 1974.

rate of firewood is around 100 million tonnes per annum. These traditional sources of energy are in continual short supply as seen in their price rise. They will continue to be so and with the cut back in kerosene production, this source will have to be more fully exploited, after allowing for full use of low temperature carbonisation plants, soft coke, briquettes and other familiar domestic fuel based on coal or lignite.

ENERGY CRISIS

It is on top of this economy of fuel and power shortages, that the oil crisis has hit the Country, creating what this Seminar has gathered to consider, namely, the energy erisis. The facts of the oil burden are well known. In 1974, we need 24 million tonnes of crude. 7 million tonnes are produced indigenously, so that we will be importing 17 million tonnes. The price of imported crude last January was $2.59 per barrel. It is now $11.65 per barrel. This means that our crude import bill will jump from Rs. 200 crores last year to Rs, 1,200 crores this year, which is around 60 per cent of the cumulative value of all our exports. This for us constitutes a crisis because (a) we will be purchasing this energy source, oil, by cutting back on the import of other industrial raw materials—steel, fertiliser feed stock, ferrous and non ferrous metals which we need equally urgently and whose reduction will induce an industrial and agricultural recession, (b) we will be reordering our structure of production not in accordance with the principal of comparative cost advantage for our exports but to meet the demands of the oil producing countries which are competitive with that of our own people, (c) the escalating prices of all crude products—petrol, SD, Kerosene, cooking gas, naphtha, lubricants, and greases—are a form of imported inflation which we can do without, as it will further aggravate the serious domestic hyper inflationary situation, (d) the shortage and escalating price of oil will, if nothing else is done, increase and reinforce the shortages in all other forms of energy referred to earlier and (e) the future demand forecasts of our energy needs for 1978-79 as set forth in the Draft Fifth Plan seem impossible—135 million tonnes of coal (against 61 million tonnes moved this year—the last year of the Fourth Plan), 6 million tonnes of lignite against the current 3 million tonnes, 130 million kilo-watts (against 78 million kilo-watts this year) and and 37 million tonnes of crude (against this year's 24 million tonnes).

PROPOSED ACTION

National Energy Board :

Against this mutually interlocking and reinforcing energy crisis facing the Country, my first suggestion is to establish at the Union level, a National Energy Board, which will be responsible for formulating a clear, co-ordinated and viable energy policy for the Country which is lacking today, draft a comprehensive energy programme and ensure its execution through the appropriate Union Ministries and Regional (Zonal) Energy Boards and State Energy Boards which should also be set up. This is the only way in which the present energy crisis can be turned into an opportunity for a long term and short term programme of action on all our energy sources in order to meet our growing energy needs, a means of ending the unseemly and continuing dispute between the railway authority, the coal authority and the consuming industries for the coal and electricity shortages, and an instrument for relating the energy surpluses and

deficits of the different States of the Indian Union. The programme that the Board should execute will involve the elements which I outline in the remaining paragraphs.

Reduction in Oil Consumption:

My second suggestion is to stabilise and gradually reduce oil consumption. Currently oil energy sources account for 32.6 per cent of our total commercial and non-commercial energy consumption and 58.6 per cent of just commercial energy consumption. Incidentally here we in India are in a far better position than the affluent countries where oil represents 60 per cent of energy consumption in the United States and Europe and 73 per cent in Japan. For as the immediate task is to stabilise the percentage consumption of oil at 32 per cent and not allow it to rise to 40 per cent as forecast in the draft Fifth Plan. That forecast was based on the sound economic criteria of comparative cost of oil which at Rs. 275 of capital outlay and 80 paise of production cost per barrel was about two thirds that of coal and electric energy. Now oil has lost this comparative cost advantage and its use should be restricted and reduced.

In reducing the use of oil in the form of its many products, another economic criterion–that of value added–may be used to start with. The value added per tonne of oil as feed stock is relatively the lowest in cooking and power generation uses and highest in petro-chemicals. Its use in fertilisers and transport falls between. To this should be added other technical criteria such as that of petrol naphtha being alternative products. The first economy on which there will be general agreement is the 20-30 per cent reduction in petrol consumption which has taken place since the November price rise of petrol. There is no scope for further reduction here if a minimum mobility in the economy is to be maintained. The aim should be to maintain the reduction at this level through the Fifth plan and use for the motor vehicles alternative fuels. This cut back in petrol consumption and production also increases the production of naphtha to be used as feed stock for our fertiliser plants. For the moment it is true, that our fertiliser factories are not able to use the increased naphtha and given the very high world naphtha prices, it is rightly being exported. But this is a short term problem. As Mangalore, Tuticorin and Barauni go on stream, we will face a serious short supply in naphtha. Second we should reduce kerosene consumption. The present 20 per cent cut is temporary until the Soviet imports reach the country, but the replacement of kerosene by cooking gas in towns and by wood and cow dung in the villages should be examined as a long term measure as a means of increasing the alternative products-diesel oil and furnace oil. I realise that the trade off to be examined here is not between kerosene on the one hand and diesel and furnace oil on the other but between the use of cow dung as fuel and as fertiliser. Third the consumption of diesel oil and fuel oil should also also be examined in order to reduce their demand. The reduction of some long distance and uneconomic small feeder railway routes, the expansion of the metropolitan transport systems and the greater use of truck trailers can result in a fuel saving of 14-25 per cent. A fourth major programmes is the switching of the power base of industrial units, fertiliser factories and thermal plants from furnace oil lo coal. This is a long term programme calling for (a) a sufficient period of time, (b) additional investment and (c) above all an assured supply of coal. To start with, thermal plants and cement units can be switched over immediately, while by the

end of the textiles, glass and paper factories can switch over. With regard to the fertiliser factories of Gorakhpur, Trombay, FACT and EID Parry, naphtha oxidation can be switched to fuel oil, and the three new ones to be set up with Japanes aid-Bhatinda, Panipat and Mathura will have to have their furnace oil fuel base reprogrammed.

Coal Supply:

This whole programme of switching over to the only fuel abundantly available to us, coal, depends for its success on reversing the past and present trends in coal supply. First we need to get the coal out of the ground and now that comparative cost of coal as fuel—both in terms of capital cost and production cost—is around half that of imported oil, the National Energy Board should review the coal price policy and undertake the necessary expansion and modernisation of capital investment in the coal mines, so that the incredible three fold gap between Indian coal productivity which is 0 66 ton for per man per day and the United States coal productivity which is 19 ton per man per day is narrow. Second as the quality of non-coking and coking coal is continuously declining so that in both non-graded coal and coke and production has doubled, it is necessary to mine clean coal and wash it, so that the ash content which lowers its heat value and increases its abrasive nature is reduced. Third the necessary additional wagons estimated at 1,500 a day over and above the daily average of 8,000 should be made available so that the 90,000 tonnes to be mined are actually delivered to the consumers. Fourth all efforts should be made to maintain industrial peace in the Bengal and Bihar Railway belt and the necessary incentives provided to ensure speedy loading and movement of wagons by the railway staff. Fifth coal mining should spread out more evenly throughout the Country (Madhya Pradesh, for example) and open cast mining is resorted to. The mining of lignite in this State should be raised to 6 million tonnes and the second mine cut opened without delay. Also low temperature coal carbonisation plants can be built at the mine month to produce soft coke, tar and gas for power plants and industry. In fact if this is done, the country can be covered by a North coal grid as one alternative to petroleum fuel.

Electric Power:

In regard to electric power, where our per capita consumption is a meagre 200 KW hours against the world average of 1,300 KW hours, there is need to proceed rapidly with the various schemes so that the Fifth Plan target of 33 million KW is attained as a minimum and surpassed. This would require the National Energy Board ensuring that the inputs are made available on time for the hydel and thermal plants under construction, saving on the wasteful transmission losses which in this State attained 18 per cent last year, the further development of regional grids, particularly in this region with its vast potential for harnessing the hydel potential of its West flowing rivers, and forging ahead with the total energy process for our 200 large industries using high pressure boilers and turbines and MHD generators. I do not need to tell you how much energy can be saved by economic and optimum use of steam and all forms of fuel. It is also necessary to establish, as is being done in Singareni. more mine mouth power stations and use extra high voltage transmission of electricity from such stations to consuming units. Railways, which are major consumers of diesel can plan and operate such large thermal power units at the coal mines in Bihar, Orissa, Madhya Pradesh and Andhra Pradesh.

Domestic Crude :

And then there is the need to increase our domestic crude production from last year's 7 million tonnes, to 9 million tonnes this year and at least to 12 million tonnes by the end of the Fifth Plan. This means that the Government should throw overboard its policy of conserving our oil reserves and of regulating its production. The need to explore exploit and use our oil reserves to the hilt is now. By the time their production begins to decline, the long term programmes of substitute energy sources will become operational. The declining rate of production in the Ankleshwar oil fields must be compensated by opening up the reserves in Arunachal Pradesh and Gujarat, and intensifying off shore oil exploration not only in Bombay High, but also off Kerala and West Bengal. The Cauvery Basin must be drilled for oil. For off shore drilling the Government must not delay in concluding contracts with the designated foreign firms. It is still proceeding with these important negotiations at the same slow pace as it was during last year—before the oil crisis broke. The loss to the country's economy in not increasing domestic crude supply will far exceed the gain from reducing the foreign collaborator's share from 40 to 30 per cent.

Long Term Programmes :

And then finally the energy crisis is an occasion to launch more purposively on programmes aimed at our abundant alternative sources of energy. For the automobile, whose numbers must and will increase with the economy's growth, there are at least three alternative sources of fuel—charcoal on which in this State a demonstration of a feasible model has already been developed, ethyl alcohol which one of our Indian Institute of Technology professors has developed as a substitute or blending agent for agricultural pumpsets which can be extended to the 8,000 diesel generators which we imported into the Country during last year's power famine, and the battery operated engine which can almost immediately be used for two thirds of our daily run cars, trucks and buses. To these three alternatives, should be added the fly wheel driven car and truck on which engineering work should be completed rapidly. The most abundant energy source that we have is solar energy where for over two decades, after devising the solar cooker, very little has been done. The National Energy Board should review and revise the NCST plans for solar, wind, tidal, chemical, geo-thermal and mechanical engineering energy and intensify these programmes so that by the start of the Sixth Plan some of these energy sources become commercially viable.

International Action :

The energy crisis has of course far more serious international overtones. The United States President in his report to the United States Congress the other day stated that the consuming countries will be spending on oil \$ 115,000 million this year, which is \$ 70,000 million more than what they spent last year. This 65 per cent jump in oil expenditures will involve the U. S. spending in 1974 \$25,000 million against \$ 9,300 millions in 1973, Europe \$ 55,500 million against \$ 22,200 million in 1973, Japan \$ 18,000 million aginst its usual \$ 6,000 million and we, the poor countries, \$ 10,000 millions more than what we spent last year. This increase for us, the developing countries, is more than all the foreign aid that we will be receiving in grants, loans and credits from the affluent countries. There is the very real possibility of the inflation and the balance of payments situation in the affluent countries leading them to a

recession, which will affect every country—rich and poor—adversely. Over half the increased revenue referred to above will accrue to the gulf oil countries leading to a sizable increase in their imports, investment in long term securities, real estate and Euro-dollars and a lowering of internationl interest rates. In this decade as a consequence there are bound to be serious structural changes in the international economy. But this increase in oil prices is only a dramatic expression of the increase in all internationally traded goods—machinery, capital goods and equipment, fertilisers and most recently wheat—which have increased by 300-400 per cent in price over the last three years. It is against this background that a number of regional meetings in ECAFE, Bangkok, in Washington among 13 nations, and among the non-aligned countries in Algeria is leading to the United Nations Conference on April 8 to consider the energy crisis as part of a new system of international economic relations founded on the equality and common interest of all States, For India, we economists have recommended that there should be a once over 30 per cent reduction in the Country's money supply, which will lead to a roll back in prices. In the international economic system could there be a similar roll back of the prices of all major internationally traded goods and services, in addition to the $3,000 million development Fund being set up with increased oil revenues, and the proposal to freeze the taxes and royalties on crude sold to the poor countries at $1.75 per barrel which was the October 1973 level?

I regard the energy crisis as a means of spurring us to take long delayed action to revive and realign our economy along lines of equity and self-reliant growth and to introduce elements of equity and sanity in international economic relations.

THE FOURTH CENSUS OF SOCIAL SCIENCE RESEARCH IN TAMIL NADU

The fourth Census (1974) of Social Science Research in Tamil Nadu follows the third Census reported in the Institute Bulletin, Volume III Nos. 5 & 6, of May-June 1973.

As in last year, the questionnaire, issued in February 1974, was addressed to 5 Universities, including the Indian Institute of Technology, Madras, 17 Colleges, 6 Research Institutes, 8 Departments of the Government and 2 Institutes of Rural Higher Education in Tamil Nadu. Reports received contain information about 118 projects in 12 different Social Science disciplines as against 270 items under 18 disciplines in 1973.

Of the 119 projects reported this year, Economics stands well ahead of all other disciplines with 51 items. Under Agricultural Economics there are 22 items, History and Politics together 11 items, Psychology 11, Social Work and Sociology 6 each, Geography 4 and 2 each for Education, Commerce and Criminology. A new addition this year to the disciplines is Economic History with 1 report. There are no reports on Anthropology, Home Science, Philosophy and linguistics in this census. The table below summarises the result of the four censuses.

Disciplines	*1971*	*1972*	*1973*	*1974*
1. Economics	85	42	125	51
2. Agricultural Economics and Co-operation	—	—	49	22
3. Economic History	—	—	—	1
4. Commerce	—	—	5	2
5. Education	—	5	2	2
6. Criminology	—	—	2	2
7. Geography	—	—	1	4
8. History	8	8	4	9
9. Politics and Public Administration	—	—	1	2
10. Psychology	31	11	14	12
11. Social Work	—	5	7	6
12. Sociology	7	4	2	6
13. Anthropology	3	—	—	—
14. Home Science	44	36	—	—
15. Linguisties	—	—	56	—
16. Others	—	4	2	—
	178	115	270	119

The table above attempts a regrouping of the disciplines from that set forth in Volume III Nos. 5 & 6 Page S.1 of Bulletin. One new feature in the current year is that the College of Rural Higher Education, Coimbatore, has given the conclusions arrived at and the suggestions arising out of the studies. These have been included as they may prove to be of interest to other Research Institutions. It is presumed that these were made available to the organisations on which the studies were made. The report from Women's Christian College, Madras, refers to a scheme for training undergraduates in research work. This may encourage students to turn to research work in their post-graduate studies. It is also seen that for the M.A. (Social Work) of Loyola College, Madras, M.Sc. (Ag.) of the Agricultural University, Coimbatore, and M.Cop. (diploma) of Rural Higher Education, Coimbatore, students do some research work as part of the studies for the respective degrees.

The Fourth Census shows a rather sharp decline in the Research Programmes and activities underway. Of the 119 projects reported 20 already appeared in the third census, so that only 99 research programmes are reported as planned or underway for the period April 1973–74 which for short is characterised as 1974. Of 270 projects reported for 1972-73 only 11 were recorded in previous year. Further 71 of the 99 research projects reported are undertaken in pursuance of the requirements of a University research degree. There is an element of non comparability between the different years' reports. Thus the first two reports for 1971 and 1972 recorded a rather large number of Home Science (44 and 36) which discipline does not appear in 1973 and 1974 as no reports were received from the Institution concerned. Again last year there was a report on a large number of linguistics projects (56) which as a discipline does not appear this year. To improve the comparability of the research projects reported as between the four years, the disciplines have been grouped under fifteen heads, with addition of others, which comprises other miscellaneous fields not included in the fifteen. The census is not complete even after four years as some of the Institutions such as the Avinasilingham College of Home Science and the Annamalai University centre of linguistic study have not reported.

There is serious lacuna in the State in the absence of research reported in Anthropology and the meagre reports in the major fields of Political Science and Public Administration. In Education and Pedagogy also there is small research in State. Except in the Psychology discipline, there is no basic or fundamental research programme reported. This means that the Tamil Nadu research is not helping to develop the discipline nor contributing to pushing back the frontiers of knowledge. In all disciplines except psychology applied research seems to be the general rule, with those in the disciplines of Social Work, Agricultural Economics and co-operation and to some extent in Economics aimed at analysing micro problems and contributing to programme execution and policy formation. The problems dealt with are multi or inter disciplinary. But except in the case of 6 institutions, the methodology pursued is very largely disciplinary. Particularly the Universities and colleges have not as yet developed the culture which can promote multi or inter disciplinary research methodology to deal with the problems which are of that nature. For this purpose some very simple arrangements such as a coffee break in the morning sessions and a tea break in the evening sessions where the professors, readers, lecturers and research scholars can meet in a common room and discuss their day's work and problems might

promote inter disciplinary studies. The relation of the programmes reported to the Fifth Plan is not close or clear. Now that the draft fifth plans—both for the country and State—have been published and are available at all the Institutions it is to be hoped that both research scholars and their guides can from next academic year guide their applied research programmes along lines of the Fifth Plan priorities. In addition, for the State the Perspective Plan for the years 1974-84 will provide an additional focus to direct Social Science research along channels of long term and short term programme and policy relevance. The research Institutions should use the Perspective Plan for this purpose. One of the research promoting and co-ordinating agencies being set up in the State is the Tamil Nadu Science foundation. The foundation will be a research funding and sponsoring agency for Social Sciences so that the needed research is not held back for lack of funds. In the case of three disciplines—Political Science, Anthropology and Education—it could also attract research personnel into the State so that programmes in these disciplines could be developed. The ICSSR regional centre at Hyderabad could also help to set up a research documentation centre in the State where one copy of every research report and document can be deposited. This will make available the documentation which the research scholar and students need.

I. ECONOMICS

Madras Christian College—Tambaram—Department of Economics.

1. Transfer of Technology and structures of transformation in Indian Agriculture. Reported in Bulletin in 1973 in Volume III, Nos. 5 & 6, page S 5.

2. Productivity and technical change in Indian Industries.

Reported in Bulletin in 1973 in Volume III, Nos. 5 & 6, page S 5.

3. Entrepreneurship in Tamil Nadu.

Reported in Bulletin in 1973 in Volume III, Nos. 5 & 6, page S 5.

4. Agricultural Credit.

The study proposes to examine the role of agricultural credit in changes in agricultural productivity.

Commencement — January '72
Completion — January '75
Degree — Ph.D.

5. Economic change in South India—a regionally and functionally disaggregated analysis.

The study aims to identify and interpret the economic change that has taken place in Tamil Nadu between 1960 and 1970. In terms of regions the economy is disaggregated up to the taluk level. The performance of the economy is analysed in terms of its main sectors. Clustering is used as the main analytical tool.

Commencement — June '73
Completion — October '75

Study by the Department of Economics

Annamali University—Department of Economics.

6. Capital formation in the agricultural sector in Thanjavur District.

Reported in the Bulletin in 1972 in Volume II, No. 6 page, 71.

7. Centre State fiscal relationship with particular reference to the impact of resource transfer.

To study the working of the financial relations of the Republican Constitution during the planning era. The study will particularly examine the impact of resources transferred from the centre to the State on the levels of economic development of the States in India.

Commencement — 1970
Completion — 1975
Degree — Ph.D.

8. Economics of Tobacco Cultivation in Tamil Nadu.

To study (a) the qualities of Tobacco production in Tamil Nadu (b) different varieties of tobacco and changes in their area and production. Talukwise area and production, input-output relation and project maximisation scheme studied.

Commencement — December '66
Completion — July '75
Degree — M.Litt.

9. Growth of Life insurance since nationalisation.

Reported in 1972 Bulletin, Volume II, No. 6, page 72.

10. Disguised unemployment in Tamil Nadu.

Reported in Bulletin in 1973 Volume III, Nos. 5 & 6, page S 3.

11. Economics of urbanisation—a case of study of Madurai conurbation.

To analyse the problems of urbanisation and to suggest solutions, Madurai Urban Centre is taken up for the study. In addition to official records, special field surveys on a sample basis of households and employment surveys, the shops and establishments and organised sector to be studied.

Commencement — 9-10-72
Completion — —
Degree — Ph.D.

12. Panchayat Union Finance in Tamil Nadu.

Reported in Bulletin in 1972 Volume II, No. 6, page 72.

13. Writing University level text books in Agricultural Economics.

Commencement — 7-1-72
Completion — 6-1-75

Study by the Department of Economics.

14. Land value fluctuations in Chidambaram taluk during the last forty years (1930—'70)

Reported in Bulletin in 1972 Volume II, No. 6, page 72.

Madurai University—Department of Economics.

15. Printing Industry in Sivakasi.

Reported in 1973 Bulletin, Volume III, Nos. 5 and 6, page S 6.

16. Foreign Trade of Tamil Nadu with reference to commodity exports.

Reported in Bulletin in 1973 Volume III, Nos. 5 & 6 page S 6.

17. Leather industry of Tamil Nadu with special emphasis on tanning.

To study the various economic aspects of the industry—empirical and historical.

Commencement — January '74
Completion — December '76.
Degree — Ph.D.

18. A quantitative economic analysis of allocation of resources in Tamil Nadu.

To determine the pattern of investment allocation among various sectors so as to (1) maximise output (2) maximise employment and (3) to bring about a better distribution of income. To frame an input-output table for the economy and to construct a linear programming model incorporating the I–0 model.

Commencement - October '71.
Completion - October '76.
Degree - Ph.D.

19. Efforts made through decentralised production on Gandhian lines in Madurai University area.

To make a critical appraisal of the Gandhian decentralised sector covering Khadi and village industries in the districts covered by Madurai University descriptive and analytical method.

Commencement — October '70.
Completion — October '75.
Degree — Ph.D.

20. Industrial structure of Madurai District.

To study the industrial development of the District by analysing the trends in productivity, size distribution of the firms, the influence of the size on the rate of increase in output and the role of financial institutions. A discrete and continuous analysis to be made with the help of production functions. Both the time series study as well as the cross-section studies to be made.

Commencement — 15-9-72.
Completion — 14-9-74.
Degree — M. Litt.

21. Public expenditure of the Government of Tamil Nadu.

To analyse the structure, pattern and impact of public expenditure, by analysing the data in relation to cost-benefit analysis.

Commencement — January '74.
Completion — January '76.
Degree — M. Litt.

Gandhigram Rural Institute, Gandhigram.

22. A study of the small industries of Mohideen Andavar, Nandavanam, Madurai. (1) To trace historically the growth of the Small Scale industries in the Nandavanam area with reference to capital structure, source of labour, goods manufactured, pattern of sales, annula profits etc. (2) to understand their problems and (3) to suggest measures for amelioration. The research design is descriptive and diagnostic. A pretested interview schedule used. All industries in the Nandavanam area were covered.

Commencement — July '73.
Completion — January '74.

Study by the Institute, Research Dept.

23. A survey of factors relevant to Health and Productivity, Athoor Block, Madurai Dist. (1) To study the relation between health input and agricultural and small industries productivity in Athoor Block. (2) To establish health as an independent variable in economic development. Information on input and output (agricultural and handloom industry) will be assembled yearly in respect of the Block, village and households for 1959, 1965, 1970. Statistical and econometric analysis and the use of conceptual framework to identify the role of quality factors in the output changes since 1959 will be made. Secondary data for Athoor Block and those collected by Interview schedule method to be used. Villages and households to be selected by random

sampling. Data to reflect seasonal variation in economic activity and health at intervals to be collected.

Project submitted to ICSSR.

Women's Christian College—Madras.

24. An enquiry into the impact of Socio-economic values on women's employment in Madras city. (1) To determine the extent to which socio-economic values affect the attitudes of working women and job-seekers (2) To suggest reforms for the welfare of working women and students and (3) To enable even undergraduate students to learn research technique. Investigation by staff and students, questionnaires, interviews, observation, relevant literature etc. used.

Commencement — August '71.
Completion — April '73.

A study by the History and Economics Dept.

Scott Christian College—Nagercoil—Post Graduate Department of Economics.

25. Panchayati Raj and Economic growth in Kanyakumari district.

Reported in 1973 Bulletin, Volume III Nos. 5 & 6, page S 7.

26. Agricultural Co-operative Banking —a case study of the Kanyakumari District Co-operative Central Bank.

Reported in 1973 Bulletin, Volume III Nos. 5 & 6, page S 7.

Institute for Techno-Economic Studies—Madras.

27. Cost benefit evaluation of the percolation pond schemes implemented under the centrally sponsored Drought Prone Area Programme in Dharmapuri and Ramanathapuram districts of Tamil Nadu.

To evaluate the benefits from the foundation of percolation ponds in the districts and assess the actual area benefited as against the area assumed by Government and to work out the cost-benefit ratio. 4 ponds in Dharmapuri and 10 in Ramanathapuram and all the wells within the zone of influence of each pond selected for Study.

Commencement — November '73.
Completion — May '74.

Sponsored by the Revenue Department, Government of Tamil Nadu.

28. Cost-benefit analysis and spread effects of Sakthi Sugars Ltd.

To make a cost-benefit analysis, to assess the spread effect and impact on the socio-economic conditions of the region and to indicate measures to further improve performance so as to make the returns larger for the community as a whole. The study is an exercise in round-by-round description of how the impact of Sakthi Sugars is transmitted to every other sector in the region. The total effect is derived by summing up the rounds horizontally. About 600 households were surveyed.

Commencement — June '73.
Completion — March '74.

Sponsored by Sakthi Sugars Limited Coimbatore.

29. Second Tamil Nadu - 2020 A.D.

To examine the implications of double population on the quality of societal and individual life in the State of Tamil Nadu by 2020 A.D. The study covers demographic and social aspects of population, economy, resources and environment, transport, social services and Government. Quantitative forecasting involves a systematic and comprehensive analysis of data

and such quantitative probabilistic forecasts and trend explorations are made for all aspects for which reliable data are available.

Commencement — June '73,
Completion — November '73.

Sponsored by Ford Foundation, New Delhi.

30. Provision of house sites to landless agricultural labourers in rural areas—Tamil Nadu and Kerala.

To assess the magnitude and resources for providing house sites to landless labour in rural areas of Tamil Nadu and Kerala. Two districts from eaeh State and three villages from each district selected for field investigation. Data collected by primary and secondary sources.

Commencement — March '73.
Completion — January '74.

Sponsored by National Buildings Organisation.

Ministry of Housing, New Delhi.

31. Evaluation of Bhoodan Land Utilisation Programme in Tamil Nadu.

Reported in 1973 Bulletin, Volume III, Nos. 5 and 6, page S 7.

University of Madras—Department of Economics.

32. Economics of welfare with special reference to education.

To measure the welfare impact of our educational policy.

Commencement — —
Completion — February '75.
Degree — Ph.D.

33. Economic development with special reference to Indian economic policy since 1950.

Commencement — 1-1-'74.
Completion — 3-12-'76.
Degree — Ph. D.

34. An institutional case study of Pachaiyappa's Educational Trust.

Commencement — 1-3-'74.
Completion — 25-2-'77.
Degree — Ph.D.

35. Economics of Printing Industry with reference to Tamil Nadu.

Commencement — 1-1-'72.
Completion — 31-12-'74.
Degree — M. Litt.

36. Public Debt.

Commencement — 1-4-'73.
Completion — 31-3-'75.
Degree — M. Litt.

37. Economic Development

Commencement — 1-10-'73.
Completion — 30-9-'75.
Degree — M. Litt.

38. Economic development of South East Asia with special reference to Malaysia.

Commencement — 1-10-'73.
Completion — 30-9-'75.
Degree — M. Litt.

39. Economic thought.

Commencement — 1-10-'73.
Completion — 30-9-'75.
Degree — M. Litt.

40. Indian Economic thought with special reference to South Indian Socio-economic Reformers.

Commencement — 1-4-'73.
Completion — 31-3-'75.
Degree — M. Litt.

41. Economic development of East European countries.

Commencement — 1-10-'73.
Completion — 30-9-'75.
Degree — M. Litt.

Madras Institute of Development Studies.

42. Economic status of small fishermen in Tamil Nadu.

To study the effects of mechanised fishing on the catch and incomes of small fishermen who rely on the catamarams for fishing, the changes in economic and social policy to assure them a living income and the facilities for marketing raw fish. Study of the documentation available with the Fisheries Department and by interviewing about 100 fishermen in North and South Madras.

Commencement — January '74.
Completion — June '74.

Study by the Institute in liaison with the Fisheries Department, Government of Tamil Nadu.

43. Educational profile of jobs in Tamil Nadu.

To study a number of job descriptions in Government, Public Sector and Private firms in order to identify the precise educational qualifications needed for selected types of jobs. Newspaper advertisements and types of jobs notified to the Employment Exchanges to be scrutinised for the purpose

Commencement — January '74.
Completion — December '74.

Study by the Institute in liaison with the Directorate of Employment and Training, Government of Tamil Nadu.

44. Operational efficiency of small and medium plantations.

To study the per acre production, programme of replanting, labour and Capital costs, processing and marketing arrangements of small and medium plantations as this State has the largest number of such plantations. The documentation from the Government Department and UPASI to be analysed to identify the current problems and propose a programme to improve their operational efficiency.

Study by the Institute during 1974.

45. Impact of Rural Development Programmes on the Rural Economy.

During the Four Five Year Plans Rs. 600 crores have been invested in Rural Development in Tamil Nadu. The study is to evaluate the impact of this programme on the living levels of the rural people and the infrastructure of development in rural areas. For this purpose 4 districts of the State will be taken every year for study.

Study by the Institute beginning 1974.

46. Relation between Rural Poverty and Rural Under-employment.

On the basis of the 1973 study of poverty in the State and State-wide distribution of essential goods, a more detailed and specific study of under-

employment in the rural areas and its relation to poverty will be undertaken. An intensive study of two predominantly agricultural districts Thanjavur and Tirunelveli will be undertaken.

Study by the Institute beginning 1974.

T. S. Narayanaswamy Institute of Social and Business Research, Madras.

47. Capacity utilisation in four industries – cement, sugar, textiles and chemicals.

The problem of full use of capacity of each of the four industries—the endogenous and exogenous factors that account for under-utilisation and the means of overcoming are to be investigated. For this year the cement industry is being investigated.

Commencement — March '74.
Completion — November '74.

48. A Nation Incomes Wages Policy.

A policy with regard to incomes and wages at the national level is being examined. Questionnires are addressed to Trade Unions, Managements and Government Departments as to the content and inability of such a policy.

Commencement — June '74.
Completion — March '75.

Centre of Social Research, Madras.

49. Income—Savings and Investments of the household sector.

50. Fishermen community in Tamil Nadu.

51. Impact of Developmental Measures upon the denotified tribes of Kallars and Marravas.

II AGRICULTURAL ECONOMICS AND CO-OPERATION

Tamil Nadu Agricultural University, Coimbatore.

52. Supply response of farmers to prices of select commodities in Coimbatore region—a micro analysis.

To analyse and estimate acreage—price relationship that would maximize farm income at micro-level with particular reference to irrigated cotton, sugarcane and groundnut in garden land farms. In the irrigated farms of Coimbatore, ten villages by random sampling and 15 farms in each village by stratified random sampling according to different size groups in terms of operational area were selected. Normative supply response functions under varying price situations by linear programming were derived. Acreage response to prices was estimated by fitting linear function with secondary data.

Commencent — 1967.
Completion — 1974.
Degree — Ph.D.

53. A study on the relative pattern of agricultural growth and its relationship with economic development in Tamil Nadu.

(1) To test the hypothesis of zero marginal product of labour in agriculture (2) To estimate the agricultural surplus and to measure their direction of utilisation (3) To analyse intersectoral relationship between agriculture and industries for economic development of the selected area. 200 farms and 25 out of 90 registered industries in Chingleput district were selected by random sampling. Functional analysis used to estimate marginal labour productivity programming and variable programming used to study inter-sectoral

relationship and to decide an optimum plan for the district.

Commencement — November '72.
Completion — October '73.
Degree — Ph.D.

54. A study on the production and marketing of chillies in Oddanchatram Block, Madurai district.

(1) To estimate cost of production of chillies green and dry per hectare and per quintal. (2) To measure resource use efficency in chillies production and (3) To study market structure for chillies. By a two stage stratified random sampling five villages and 100 farms of irrigated crop of chillies in Oddanchatram Block were selected. Conventional farm management analysis and functional analysis by using Cobb-Douglas type of functions were made for green and dry chillies separately. Markets for chillies studied to work out price spread.

Commencement — 1972.
Completion — 1973.
Degree — M.Sc. (Ag)

55. Production, marketing and price behaviour of pepper in Vazhoor block of Kerala State.

To study the cost of production, market structure, price spread in market and the acreage response to price changes of pepper. A sample of forty pepper farms from all six villages of Vazhoor were selected by probability proportion to area under pepper in each village. Data collected by survey and analysed by using the Cobb-Douglas type of production function. Distribution channel was traced and price spread and supply response to price analysed.

Commencement — 1972.
Completion — 1973.
Degree — M.Sc. (Ag.)

56. A study on the economic conditions of small farmers and agricultural labourers in Karamadai Block of Coimbatore District.

To study resource use efficiency of small farmers, to estimate average family income and per capita income of small farmers and agricultural labourers; to compare their standard of living and to assess the level of indebtedness in the two classes. 75 small farmers and 75 labourers in 5 villages in Karamadai Block selected by two stage random sampling. (small farmers mean cultivators of 2 to 3 acres wet land or 3 to 4.5 acres garden land or 6 to 9 acres dry land). Functional analysis used for resource use efficiency, standard of living and income distribution and Pareto's curve fitted for pattern of income distribution study.

Commencement — 1972.
Completion — 1973.
Degree — M.Sc. (Ag.)

57. Impact of long term credit in agriculture - a micro-analysis with special reference to Land Development Bank loans.

To estimate the impact of long-term investment made on digging open wells on cropping pattern, cropping intensity, and farm income; to measure Capital productivity investment and to compare relative productivity of resources in farms before and after the investment. A random of 51 beneficiaries of loans from Primary Land Development Bank, Uthangarai, Dharmapuri District and 31 non-beneficiaries was studied. Functional analysis used to study capital productivity. Pay back method and internal rate of returns used to compare capital productivity before and after development investment

and between beneficiaries and non-beneficiaries.

Commencent — 1972.
Completion — 1973.
Degree — M.Sc. (Ag.)

58. An economic appraisal of credit requirement and credit gap in agriculture in Parambikulam-Aliyar Project region.

To study the credit requirements of farmers, the role of different financing agencies and the credit gap at farm level. Data collected by survey from a stratified random sample of 120 farms in three size groups in Udumalpet and Gudimangalam Blocks. Conventional analysis used to draw conclusions.

Commencement — 1972.
Completion — 1973.
Degree — M.Sc. (Ag.)

59. Economics of milk production in Southern taluks of Coimbatore District.

To evaluate the pattern of resource use and its efficiency in milk production to work out unit cost of milk production. All the 180 farmers in 15 centres, selected by random sampling, out of the 42 centres in the operational area of the Sengeri co-operative Buffalo Improvement and Mill Society Ltd. in Coimbatore District, were covered by the study. Data collected by survey method analysed by conventional and functional analysis for the study.

Commencement — 1972.
Completion — 1973.
Degree — M.Sc. (Ag)

60. Changes in Rice farming in selected areas of Tamil Nadu. To study the cultivation practices and adoption patterns, the factor product relationship, the influence of the physical resources and institutional and economic factors on the adoption level and their impact on the labour market, the benefits shared and the constraints for further growth in the farm output and income of HYV paddy. 151 farmers were selected for the study based on the criteria of extent of adoption of HYV, nature of irrigation etc. from villages chosen at random from the list of villages having larger proportion of its paddy area under IR varieties, in North Arcot being the district which responded spectacularly to the introduction of HYV in 1960-70. Conventional tools of economic analysis of farm business were employed.

Commencement — 1971.
Completion — 1972.

Sponsored by IRRI, Philippines and International Development Research Centre, Canada and carried out by the Department of Agricultural Economics.

61. Crash scheme for rural employment.

To study unemployment and under-employment in Salem district, seasonal variation in employment and unemployment levels, wages, the impact of the scheme on unemployment situation and to suggest alternative programmes to alleviate unemployment and scope for training to unemployed. 120 households were selected by proportional sampling after enumerating all houses in 12 villages chosen by probability proportion to the number of agricultural labourers (1961 census) from four blocks on in each of the four farming zones into which Salem district was stratified for study.

Commencement — 1972.
Completion — 1973.

Study by the Department of Agricural Economics.

62. Scheme for organising studies into the economics of farm management in Coimbatore district.

To collect comprehensive data in a style and manner to be of use for formulating agricultural policies and for developing farm based information for extension purpose and to design and plan approriate farm management research pattern applicable to Indian situation. 150 farms selected randomly at the rate of 10 per village from 15 villages chosen from Norrh and South into which Coimbatore district was divided. (5 villages from each zone and the other 5 were distributed by P.P.S. with reference to gross area cultivated.)

Commencement — 23-2-'70.
Completion — 31-12-'74.

Sponsored by the Directorate of Economics and Statistics Ministry of Food and Agriculture, Government of India and conducted by the Department of Agricultural Economics. Data sent to the Directorate for analysis.

63. Comprehensive scheme for studying the cost of cultivation of principal crops in Tamil Nadu State.

To collect data on cost of cultivation for all important crops in all parts of the State, inputs and outputs in physical and monetary terms for different categories of holdings, distribution of holdings and area and production to the level of cost, with a view to assisting policy makers for price fixation and research workers. 480 farmers were studied by cost accounting method choosing 10 farmers in 5 different size groups and 2 from the progressive farmers from clusters of 3 villages each taken from 40 selected taluks of the 8 zones into which Tamil Nadu was demarcated based on cropping pattern, rainfall, irrigation and soil types. During 1971-72 paddy was the principal crop studied. In 1972-73 groundnut was studied in 30 clusters retaining to paddy clusters. During 1973-74 sugarcane studied in 23 clusters in the 7 clusters retained for groundnut and 10 clusters for paddy respectively.

Commencement — October '70.
Completion — For the entire IV and V plan period.

Sponsored by the Directorate of Economics and Statistics and undertaken by the Department of Agricultural Economics. Data sent to the Directorate for analysis.

64. A study on the management pattern of co-operative societies in Coimbatore district.

To study the educational, economic and political background of members of managing committes, their influence on management, the frequency and tenure of directorship and membership in managing committees and the extent of participation of members in management. Twelve co-operative Agricultural Credit Societies in Coimbatore district were selected at random comprehensive questionnaire used and tabular analysis made.

Commencement — December '72.
Completion — June '73.

Undertaken by the Department of Agricultural Economics.

65. Pattern of consumption of fertilizers and its determinants.

To study the levels of fertilizer consumption and the limitation at farm level in Coimbatore district. 90 farmers, 9 each from 5 villages each of Gobichettipalayam and Coimbatore represeting wet and garden land regions selected at random. Data collected by survey method and

analysed by conventional tool of farm management research.

Commencement — January '72.
Completion — December '73.

Undertaken by the Department of Agricultural Economics.

66. An economic enquiry into the problems of marketing perishables with special reference to tomato in Coimbatore taluk.

To study the production structure of tomato around Coimbatore, the market structure, the problems of marketing, the price spread and suggest improvements, 48 tomato growers selected at random at 6 per village from 8 villages growing vegetables. All the wholesalers in Kumaran, Sundarapuram and Lankarkana Pannirselvam markets and Chintamani Co-operative Supermarket investigated and one retail permanent stall holder in the markets studied by survey. Conventional tools and regression analysis used.

Commencement — October '72.
Completion — September '73.

Undertaken by the Department of Agricultural Economics.

67. A study on the impact of Lower Bhavani Project on farming efficiency and capital formation and in land and labour utilization in farms benefited by the project in Gobichettipalayam taluk, Coimbatore District.

60 farms on the left side of the canal in Gobichettipalayam constituting the project area and 30 on the right side constituting the non-project area were selected by two stage random sampling and covered by survey method. The farming efficiency was analysed by conventional techniques and functional analysis. The capital formation was measured by capital flow approach.

Commencement — 1972.
Completion — 1973.
Degree — M.Sc. (Ag.)

College of Rural Higher Education, Coimbatore.

68. An enquiry into the working of a regulated market.

To study the general working, the pattern and extent of marketing, the role of market functionaries, the effect in the regulation of trade in the notified crop and area of the regulated market and to offer suggestions.

By proportionate sampling 80 respondents selected from 3 hamlets, one random hamlet each having been taken from 3 revenue villages, in the jurisdiction of the Tirunelveli Regulated market, by stratified random sampling on the basis of the distance of the villages to the office of the market. Field survey method and interview technique used.

The conclusion arrived at are: (1) The extent of sales made through the market were meagre-varying from 0.46 percent to 2.94 percent only (2) Respondents were able to realise higher prices and (3) marketing charges were reduced to greater extent.

Commencement — April '73.
Completion — April '74.
Degree — Post-Graduate Diploma in Agricultural Economics and co-operation.

69. Pattern of Member-beneficiaries of a House Mortgage Society.

To study the pattern of membership, extent of benefits to members and the relationship between the two. Krishnagiri House Mortgage Society, Dharmapuri district, was selected by purposive sampling and through census method all the 100 members were covered, by two comprenhesive schedules, one for the society and one for the members. Conclusions: Relationship could be traced between certain socio-economic factors such as caste, religion and value of wealth owned by members on the one hand and quantum and timeliness of the loans on the other. Suggestions: Adequate loans to the poor and low caste members, neither religion nor value of wealth owned to influence loans, timely loans, simplification of loan procedure and society should try to attract deposits.

Commecement — 1-3-'73.
Completion — 1-3-'74.
Degree — M. Cop. (Diploma)

70. Members' satisfaction with the working, service rendered and management of an Urban Co-operative Bank, and the relationship between the members, socio-economic charactertics and their extent of satisfaction.

The Kaveripatnam Co-operative Urban Bank, Dharmapuri district, selected by purposive sampling. 8 respondents selected by proportionate random sampling from the agriculturists, merchants, artisans of the Bank and wage-earner members. Survey method and personal interview adopted with one schedule for the members and one for the Bank.

Conclusions: The majority of members were satisfied with the facilities for investment in the Bank, interest offered, adequacy, duration and interest charged for loans and accepted that their economic conditions had improved. Suggestions: Intensive and thorough membership education is essential to understand the real purpose of the Co-operative Bank and the Principles of Co-operation.

Commencement — April '73.
Completion — April '74.
Degree — M.Cop. (Diploma)

71. The impact of a Weavers' Co-operative Society on Employment and Savings habits of its members.

To study pattern of employment and wage rates of weavers before joining society, the impact of the society on employment, income, expenditure and savings and the relationship between the extent of savings and the socio-economic characterstics of the selected weavers. Edappadi, Salem District Weavers' Co-operative Society was selected by purposive sampling and by proportionate random sampling eighty respondents from the four villages covered. Two schedules one for the society and one for members used.

Conclusions: A large majority of the respondents worked for 25 days a month, depended entirely on the society for work and yarn supply and saved more than before;

Suggestions: The society should extend its area of operation, explore markets for its goods and organise savings promotion campaigns.

Commencement — April '73.
Completion — April '74.
Degree — M.Cop. (Diploma)

72. A study of the impact of sugar mill on the cropping pattern and the adoption

of technique in the cultivation of sugarcane in Anthiyur Block and the difficulties faced and benefits derived by sugarcane growers.

The study covered the Panchayat Union of Anthiyur, Coimbatore District. Three villages by stratified sampling on the basis of the villages to the mill and eighty households by proportionate stratified random sampling on the basis of land holdings selected. Case study and survey methods with two schedules, one for the mill and one for the growers used.

Conclusions: The total cultivated area under sugarcane increased from 12.25 to 18.1 percent during 1967-73 showing phenomenal change in cropping pattern due to rise in price of sugarcane. The personal and socio-economic factors like age, caste, education etc. were influencing factors in adoption of new techniques.

Suggestions: More dry lands may be brought under sugarcane. The recovery percentage of sugar was not appreciable. Mill should set apart some money for research and training.

Commencement — 1-5-'73.
Completion — 31-3-'74.
Degree — M.Cop. (Diploma)

Scott Christian College, Nagercoil.

73. Cost-benefit relations of paddy production in Thovalai Taluk.

To examine the profitability of paddy cultivation and the various input contributions to total output. A sample study by regression analysis.

Commencement — July '72.
Completion — July '75.
Degree — M.Litt.

III ECONOMIC HISTORY

Indian Institute of Technology, Madras —Department of Humanities and Social Sciences.

74. Some aspects of the Economic policy of the East India Company in Madras Presidency, 1784–1858.

To establish that the East India Company was not influenced by the Nineteenth Century Economic doctrines in administering the Presidency. But the lack of interest seems to have prevented the benefits of the Industrial Revolution from being transmitted to India by the British.

The theseis is based mainly on primary sources such as the historial documents of the Company preserved in the Tamil Nadu State Archives, Madras and the National Archives of India, New Delhi.

Commencement — June '68.
Completion — March '73.
Degree — Ph.D.

IV COMMERCE

Annamalai University, Annamalainagar— Department of Commerce.

75. Impact of multi–agency approach on agricultural finance with particular reference to Co-operative finance in Thanjavur district.

To study whether the multi agency approach in rural credit has created any change in the quantum and direction in the matter of farm finance and whether the performance of Co-operatives has improved since. By interviewing agriculturists covering a sizeable percentage of households in the district and questionnaires to District Co-operative Central Bank, Nationalised Banks and other agencies in the area.

Commencement — 15-9-'73.
Completion — 14-9-'75.
Degree — Ph.D.

76. Development of Entrepreneurship in Tamil Nadu.

To assess the development of entrepreneurship in the State, by theoretical analysis, questionnaire and personal interviews.

Commencement — 17-9-'71.
Completion — 16 9-'76.
Degree — Ph.D.

V EDUCATION

Madras Institute of Development Studies.

77. The educational status of Scheduled Castes and Scheduled Tribes in Tamil Nadu.

Completed.

In co-operation with ICSSR, New Delhi.

78. Primary education, wastage and adult literacy in Tamil Nadu.

Reprinted in Bulletin Volume III Nos. 5 & 5, page S 17.

VI CRIMINOLOGY

University of Madras. Department of Psychology.

79. Psychological and social aspects of murder.

Reported in Bulletin Volume II, No. 6, page 81.

80. An investigation into the drug problem among male students in Madras city colleges. Reported in Bulletin Volume III, Nos. 5 & 6, page S 18.

VII—GEOGRAPHY

Sri Meenakshi Government College for Women, Madurai—Department of Geography.

81. Pilot study of the shopping parade of Palani town.

To study the land use pattern, use of buildings, stage facilities in shops, nature and source of commodity sold, duration of ownership, shop rent index, nature of customers and frequency, age, sex and nature of shop assistants etc. to prepare a model and analyse the functions of a bazaar street of a small town, by means of questionnaire, schedule and sample survey.

Commencement — 11th March.
Completion — 24th March.
Degree — Post-Graduate Degree.

82. Socio-economic survey of a village.

By collection of agricultural statistics from the village records, demographic statistics and study of the functional morphology of the village house types, use of implements, migrant agricultural labour, agro-industries etc. Questionnaire method used.

Commencement — 20-12-'73.
Completion — 4-4-'74.
Degree — Post-Graduate Degree.

83. Traffic survey at peak hours at the two road intersections on either side of the new Vaigai bridge, by group survey to record the varied vehicular movement in suitable schedules and mapping of the traffic flow diagrams.

Commencement — 1-4-'74.
Completion — 8-4-'74.
Degree — Post-Graduate Degree.

84. Weathering and rock study in Alagar Koil area.

To study the changing land use pattern of suburban Madurai, rock study and types of weathering by observation and identification.

Commencement — 10-12-'73.
Completion — 11-12-'73.
Degree — B.A.

VIII—HISTORY

Madurai University, Madurai—Department of Ancient History.

85. Socio-economic impact of the Madurai Meenakshi temple on the local public.

To determine how far the Meenakshi temple, one of the largest in Tamil Nadu, has functioned as a socio-economic factor in the life of the community. The temple records, other literature used as an inter-disciplinary study using methods of Sociology, History and Religion.

Commencement — October '73.
Completion — October '74.
Degree — An American degree for the foreign scholar.

86. Evolution of Toponyms (place names) in ancient and medieval Tamil Nadu with special reference to Madurai District.

To determine the linguistic and cultural processes through which place names are designed and evolved. An inter-disciplinary study involving history and geography and local traditions.

Commencement — September '73.
Completion — September '75.
Degree — M.Litt.

87. Governmental and social policy of the ancient and medieval Tamils.

To determine the political and socio-economic base for the present society that was laid in ancient medieval times in Tamil Nadu. Primary contemporary epigraphs and foreign notices supplemented by secondary sources utilised.

Commencement — November '70.
Completion — January '74.
Degree — Ph.D.

Annamalai University, Annamalainagar—Department of History and Politics.

88. Women in Tamil History and Literature.

A historical and comparative study of the position of women through the ages with special reference to the Tamil Literature and Tamil History.

Commencement — 23-10-'72.
Completion — 23-10-'77.
Degree — Ph.D.

89. History of the Madras Legislature from 1909 to 1947.

The problem connected with the thesis is how far the policy association and the provincial autonomy were successful and how far the system of bicameralism was suitable to the Madras Legislature on the basis of the Indian Councils Act 1861, 1892, the Morley-Minto Reforms of 1909 the Montagu-Chemsford Reforms of 1919 and the Act of 1935 and the principles of Dyarchy and Bicameralism.

Commencement — 12-10-70.
Completion —
Degree — Ph.D.

90. The role of feudatories in Chola History.

To study the part played by feudatory dynasties in imperial activities, political, military and cultural. Sources epigraphical and literary.

Commencement — 1958.
Completion — 1974.
Degree — Ph.D.

91. Later Pandyas.

To survey the history of the Pandyas from A.D. 1190 in all aspects, to attempt to solve some problems of later Pandyan history, by study of epigraphical, literary and foreign writers in a comprehensive way.

Commencement — 1958.
Completion — 1974.
Degree Ph.D.

92. The Thondaimans of Pudukkottai State.

To study the origin and significance of the title Thondaimans; ancestory of Thondaimans; early history from the origin of Kallars, the Thondaimans of Pudukkottai and their relations between the Maratha Rajas and Nayaks of Tanjore, historical circumstances which led to the foundation of the Pudukkottai State and the relations between the Thondaimans and Sethupathi's of Ramnad. Period—from the East India Comany up to the merger of the State in 1948 to the Indian Union.

Commencement — 24-5-'72.
Completion — 24-5-'75.
Degree — Ph.D.

Presidency College, Madras—Dept. of History.

93. Untouchability in Tamilakum, ancient and medieval periods up to 1500 A.D.

To trace historically the origin and growth of untouchabily in India in general and Tamil Nadu in particular up to 1500 A.D., by consultation of classics, devotional and other literature of the period, questionnaire to erstwhile untouchables etc.

Commencement — 1966.
Completion — 1974.
Degree — Ph.D.

IX—POLITICS AND PUBLIC ADMINISTRATION

Annamalai University, Annamalainagar— Department of History and Politics.

94. Centre-State relation with special reference to Madras since 1956.

To study the exact relation between the Federal Government and the Regional Governments on different spheres.

Commencement — 1-1-'72.
Completion — 30-12-'74.
Degree — Ph.D.

95. A comparative study of the working of Federalism in India and U.S.A. (formative periods)—a critical and comparative study, with reference to original sources.

Commencement — 1968.
Completion — 1975.
Degree — Ph.D.

X—PSYCHOLOGY

University of Madras — Psychology Department.

96. Impact of higher education on attitudes and values of women students.

To study the educational, social and environmental factors associated with

attitude development and change. Interview cum questionnaire technique to be used.

Commencement — January '73.
Completion — January '75.
Degree — M.Litt.

97. A study of educational backwardness, determined by such factors as socio-economic status, intelligence and personality. Tests of achievement, intelligence and personality–Kuppuswami's Scale.

Commencement — January '73.
Completion — January '75.
Degree — M.Litt.

98. Developmental Psychology.

To study factors associated with developmental aspects of children with special reference to the formative years, by observation, interview and questionnaire.

Commencement — 1-4-74.
Completion — April '77
Degree — Ph.D.

99. A study of perceptual and conceptual components of analytical and global functioning in children and their realistic intelligence, extraversion and intolerance of ambiguity.

The aim of the study is to see the relation between field independence – dependence style and descriptive-analytical, relational – contextual style and their relation to intelligence extraversion and intolerance of ambiguity. Embedded figures test, conceptual style test, personality inventory and perceptual ambiguity test developed by Smock and Ravin's matrices and correlation technique to be used.

Commsncement — April '73.
Completion — April '75.
Degree — M.Litt.

100. A study of Preparatory Set with normals and neurotics.

Preparatory set is defined as expectancy. A research was conducted in this area with normals and the present is one with neurotics with a sample of 25 neurotics and Apparatus – Perceptual tasks will be used.

Commencement— 1974.
Completion —
Degree — A part of the Study already submitted for Ph.D.

101. The relation between intellectual concept and sensory functions.

To find the relation between intelligence, concept formation and sensory sensitivity by correlational analysis.

Commencement — 1-4-'73.
Completion — 1-4-'76.
Degree — Ph.D.

102. An investigation into the Semantic aspects of some political concepts.

Reported in Bulletin 1972, Volume II, No. 6, page 80.

Annamalai University, Annamalainagar—
Department of Psychology.

103. A study of relationship between emotional adjustment, socio-economic background, school achievement and intelligence among school children.

Emotional adjustment, social status and intelligence estimated through psychological tests, supplemented by questionnaire for personal data and verification of school records for school achievement and a correlated study to be made.

Commencement — 14-3-'73.
Completion —
Degree — Ph.D.

104. A psychological study of consumers' behaviour towards supermarkets in Tamil Nadu.

To investigate the motivational, personality and emotional factors that determine the consumers to buy and use particular products or service and not to buy certain other products and services. Survey method and a general questionnaire to be used and certain psychological scales will be standardised.

Commencement — 14-3-'73.
Completion — 14-3-'78.
Degree — Ph.D.

105. Attitudes and adjustment problems of foreign nationals in India

To study and measure objectively the attitudes and adjustment problems of foreign nationals in India engaged in professions in vocations in Cities and Towns, purely in the interests of evaluating their social status and problems of adjustments. Standardised tests employed are :- (1) modified Bogardus social distance tests, (2) ascendance—submission reaction test for men and (3) social adjustment test constructed by the researcher-quantitative and qualitative analysis.

Commencement — 1968.
Completion — 1974.
Degree — Ph.D.
(Grant from UGC)

Indian Institute of Technology, Madras —Department of Humanities and Social Sciences.

106. Job satisfaction and job performance.

To review and evaluate the theoretical propositions concerning the relationship between satisfaction and performance, to establish and interpret the relationship and suggest ways and means of increasing organisational effectiveness. The satisfaction is measured by an attitude questionnaire designed to determine the need satisfaction in five need areas defined by Marlow's need heirarchy. The performance will be measured by superior and peer ratings. The study is confined to one private company to be extended to others, to the lower and middle level managers.

Commencement — 4-2-'74.
Completion — 4-7-74.
Degree — M Sc. in Industiral Management.

Health and Family Planning Department, Government of Tamil Nadu—Directorate of Health Services and Family Planning.

107. Primary Health Centre role perception study.

To study the role descrepancy among the Primary Health Centre Staff compared to these expected of them; the relation between the prevailing non-specific role concepts among the Primary Health Centre staff and the satisfactory functioning of the Primary Health Centres; the possible causes for the prevailing role ambiguity and suggest ways and means of improving the knowledge regarding the staff role specificity and functioning of the Primary Health Centres. Data will be collected by using structural questionnaires and from records at three levels viz. Headquarters, District level and Primary Health Centres.

Commencement — August '73.
Completion — October '74.

Study by the Department.

XI—SOCIAL WORK

Loyola College, Madras—Department of Social Work.

108. A study on people's participation and motivation in the community building programme of the village Reconstruction Organisation, Andhra Pradesh, by financial contribution, free labour and by voluntary self-improvement of houses and surroundings.

60 families chosen by sytematic random sampling out of the 280 families belonging to the VRO in Guntur District. Interview schedule and non-participant observation used.

Commencement — June '73.
Completion — February '74.
Degree — M.A. (Social Work)

109. A study of centre of Indian Trade Unions in Madras City.

To find out about the impact of Marxist ideas on workers affiliated to centre of Indian Trade Unions and its effects on socio-economic and political structures in India. 54 members of the working committee from 12,000 workers of the Adyar, Ayanavaram and Tondiarpet Deports of the Pallavan Transport Corporation selected by stratified purposive sampling. Interview schedule used.

Commencement — March '73.
Completion — February '74.
Degree — M.A. (Social Work)

110. Metal Box Employees' knowledge about and attitude to Family Planning Scheme and the Management's Family Planning Motivation Scheme. From the 938 married employees, 56 employees (6%) were selected by systematic random sampling Interview schedule used.

Commencement — April '73.
Completion — February '74.
Degree — M.A. (Social Work)

111. Absenteeism in Pallavan Transport Corporation Ltd., Madras—Causes of absenteeism and methods to reduce absenteeism.

From the drivers and conductors of the PTC Central Depot who had absented themselves for more than 45 days in the period July '72, to Dec. '72, 25 drivers and 25 conductors were selected by stratified random sampling. Interview schedule used.

Commencement — June '73.
Completion — February '74.
Degree — M.A. (Social

Madras School of Social Work, Madras.

112. Vocational aspirations and aptitute of High School students and school drop-outs.

Reported in Bulletin Volume III Nos. 5 and 6, page S 24.

113. Problems of the aged in rural areas of Tamil Nadu—60 years and over.

Reported in Bulletin Volume III Nos. 5 and 6, page S 24.

XII—SOCIOLOGY.

College of Rural Higher Education, Coimbatore.

114. A social analysis of rural credit.

To study the extent of credit by agency of selected rural families in the light of their socio-economic context and the factors like rate, interest, timeliness etc. responsible for preference of agency in-

cluding co-operatives. Two agricultural primary co-operative societies, one successful and another unsuccessful from Ammapattai block in Coimbatore District, were selected by stratified random sampling and 50 families each from two villages which served as headquarters of these societies were chosen by systematic random sampling. Schedules used were: listing schedule, society schedule, village schedule and household interview schedule.

Conclusions: While in one village the institutional agency was the primary source of borrowing in the other it was not. Socio-economic factors which had influence over credit and size of annual income.

Suggestions: Rural indebtedness forms part of the socio-economic problems and general development is to be planned. The system of credit societies needs to be modified.

Commencement — April '73.
Completion — April '74.
Degree — M.Cop. (Diploma)

Annamalai University, Annamalainagar— Department of Sociology.

115. A socio-historic study of the art and architecture of Chidambaram temple.

To study the development of the Dravidian temple architecture and its correlation to the social and cultural progress of the people of Tamil Nadu, by critical comparative study of the documentary evidences and historical records.

Commencement — February '73.
Completion — February '76.
Degree — Ph.D.

116. A sociological study of the priestly community—the factors and trends of change in the community.

A study by questionnaire, Rating scales, Interview and case history.

Commencement — February '72.
Completion — February '7/.
Degree — Ph.D.

117. Problems of the C.D. personnel.

To study the causes for the failure of the Community Development Programme, by questionnaire, interview, Rating scales.

Commencement — August '73.
Completion — August '78.
Degree — Ph.D.

118. A socio-historic study of the art and architecture of the Chidambaram temple.

To bring to light the hidden art treasures of the temple, its architecture and iconography, their historic and cultural significance and to asses through these the contribution of Tamilagam to the cultural story of India. Observation, interview and literary sources.

Commencement — 26-3-'73.
Completion — March '76.
Degree — Ph.D.

Annamalai University, Annamalainagar— Department of Sociology.

119. A sociological study of the Dikshithar Community of Chidambaram.

To find out the factors and forces of change operating in the community and the areas of social structure such as family and kinship structure, economic and rural structure communication and recreation where changes are more prominent.

Commencement — 10-2-'72.
Completion — February '75.
Degree — Ph.D.

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